Bruce N. Freeman Memorial Bicycle Path
Acton, MA

Feasibility Study
Final Report

Prepared for
Town of Acton, Massachusetts

Prepared by
Fay, Spofford & Thorndike LLC

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EXECUTIVE SUMMARY

The Town of Acton is at a critical point in the planning process for a proposed Alternative Transportation Facility / Bicycle Path. Construction of the northern 7-mile segment of the Bruce N. Freeman Memorial Bicycle Path in Lowell, Chelmsford, and Westford will begin in 2004. The Town has undertaken an East Acton Village Planning and Transportation Study to assess existing conditions and outline future improvements to the East Acton Village area. State planning efforts are underway for the redesign of the Concord Rotary and the stretch of Route 2 extending to Route 111, both of which have the potential to affect the bicycle path route through the towns of Acton and Concord. In Sudbury, a task force has been appointed to study and make recommendations to town officials on the bicycle path. The Friends of the Bruce Freeman Rail Trail, an ad-hoc group of residents representing towns along the corridor, are gaining momentum as they educate themselves and continue their outreach activities in an effort to make the 22-mile bicycle path a reality.

The goal of the study effort for the Acton portion of the Bruce N. Freeman Memorial Bicycle Path was to assess the feasibility of constructing a 4.6-mile shared use bicycle path along the Commonwealth of Massachusetts owned railroad right-of-way within Acton. The study area extends from the Concord Town Line near Route 2 north to the Carlisle Town Line near the junction of Route 27 and Route 225. Town officials and residents have taken a proactive approach to bicycle path development by appropriating funds at Town Meeting to complete this feasibility study. Further, the Town allocated municipal staff time for representation on the Rail Trail Committee and extended the scope of the draft feasibility study from the 2.8-mile segment to the entire 4.6-mile corridor. The Town recognizes that the bicycle path will be a strong addition to the local transportation network and will help expand the Town's pedestrian and bicyclist facilities. At the regional level, the proposed bicycle path will also serve to connect communities north and south of Acton and provide an important link in the region's intermodal transportation network.

The feasibility study builds a compelling case for constructing the 4.6-mile bicycle path within Acton. The study was conducted in three phases: field investigation / analysis of existing conditions, bicycle path conceptual design, and development of an implementation plan. Beyond the physical design and construction aspects, the justification for the project was further strengthened by the existing and future demand for the bicycle path based on local and regional demographic and development trends.

Existing conditions in the project area were evaluated using on-site visual inspection, discussions with local officials, and a review of available State and Town records. The segment of railroad right-of-way running parallel to Great Road (Route 2A/119) and along Route 27 in North Acton is bordered by primarily commercial and some residential uses. The remainder of the right-of-way is primarily located adjacent to conservation and wetland areas. The railroad right-of-way travels through several environmentally sensitive areas. Based on the Consultant's site walk and experience on previous projects, it is unlikely that the existing conditions in the study area would prevent construction of the bicycle path. Permitting and environmental impacts can be either avoided or mitigated and it is unlikely that

any of the environmental contamination issues located in the vicinity of the study area would preclude construction of the bicycle path.

A conceptual bicycle path design was developed for the 4.6-mile railroad right-of-way that includes six at-grade crossings, five bridge crossings over Nashoba Brook, and one crossing over Butter Brook. The goal of the conceptual design was to minimize or eliminate impacts to environmental resources, improve safety conditions at bicycle path / roadway crossings, and reduce project costs where possible. It is recommended that the bicycle path be designed as a 10-foot wide bituminous concrete paved surface with 2 to 4 foot shoulders, varying in width depending upon the width of the rail bed and location of adjacent environmental resources. Also, it is recommended that the existing bridge structures be removed and replaced with pre-engineered bridge structures for cost and maintenance considerations. The preliminary cost estimate places the cost of the project at approximately $4.4 million at the time of construction.

An implementation plan was drafted to outline the steps necessary to proceed forward with the design and construction of the project. Funding for the design and construction of the bicycle path will need to be secured from local, state, or federal sources. The Town needs to evaluate the project's eligibility under the policy and program provisions of each potential funding source. Once construction of the bicycle path is complete, the Town will be responsible for the routine maintenance and policing of the path. Therefore, it will be important for the Town to program future fiscal expenditures over the lifetime of the project.

A number of strategic planning issues need to be discussed among local officials and appropriate state agencies early in the project planning and development stages. These issues mainly relate to Town and private use of the EOTC managed right-of-way and bicycle path access across state-owned roadways. Tackling the difficult issues early on will help streamline the process as the bicycle path proceeds to design and construction. The Town should establish a realistic timeframe over which to advance the project and assign responsibilities to carry out the necessary tasks. The Town should take a leadership role in launching a community-wide marketing and promotional campaign to gain solid support and resources, both human and capital, for the Acton portion of the Bruce N. Freeman Memorial Bicycle Path. Gaining community support and addressing concerns at the outset of the project will lead to the successful implementation and long-term sustainability of the bicycle path.

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1 INTRODUCTION

Acton is currently working to bring about two regional shared use paths, the Bruce N. Freeman Memorial Bicycle Path between Lowell and South Sudbury and the Assabet River Rail Trail (ARRT) that will pass through the communities of Marlborough, Hudson, Stow, Maynard, and Acton.

The Bruce N. Freeman Memorial Bicycle Path is planned between Lowell and South Sudbury via the former railroad right-of-way of ConRail, now owned by the Commonwealth of Massachusetts, under the care and control of the Executive Office of Transportation and Construction (EOTC). Approximately 4.6 miles of the planned Alternative Transportation Facility, hereinafter referred to as a bicycle path, is located within Acton.

The Town of Acton retained the services of Fay, Spofford, & Thorndike, LLC (FST) of Burlington, Massachusetts to assess the feasibility of constructing the Acton portion of the Bruce N. Freeman Memorial Bicycle Path. The study area extends from the Concord Town Line near Route 2 north to the Carlisle Town Line near the junction of Routes 27 and 225. The Town appropriated funding to complete this study in response to the strong interest of the residents and municipal officials to construct a shared use path within the Town of Acton. Funds for this feasibility study were appropriated at Acton's Annual Town Meeting in April 2000.

At the bequest of the Board of Selectman, a Rail Trail Committee composed of varying interests within the Town of Acton was formed at the outset of the study effort. The following individuals were appointed to the committee:

Tom Tidman - Natural Resources Director
David Abbt - Engineering Administrator
Dean Charter - Municipal Properties Director
Nancy McShea - Recreation Director
Roland Bartl – Town Planner
Kristin Alexander - Assistant Town Planner

Input was received from community members attending a public informational meeting on February 26, 2003 at the Acton Town Hall. The meeting was advertised in the local newspaper and an article was subsequently published to summarize the meeting. The meeting minutes are included in Appendix A of this study.

The Acton Rail Trail Committee, EOTC, MassHighway, and the ad-hoc 'Friends of the Bruce Freeman Rail Trail' group were all provided with an opportunity to review and comment on the Draft Feasibility Study. Their comments and edits were subsequently addressed during the preparation of the Final Feasibility Study.

Chapter 2 of this study presents information on existing site conditions along the railroad right-of-way. Chapter 3 of the report sets forth a conceptual design for the bicycle path. Chapter 4

addresses the steps necessary to proceed forward with the design and construction of the project.

1.1 Project Description

The Bruce N. Freeman Memorial Bicycle Path, or Bruce Freeman Bicycle Path, between Lowell and Sudbury is a 22-mile shared use path being constructed in sections along the old Lowell Secondary Track right-of-way. Construction of the northern 7-mile segment of the path in Lowell, Chelmsford, and Westford will begin in 2003.[1] This section of bicycle path is being constructed in advance of the more difficult connections. The 15-mile segment which would connect Westford and Sudbury via Acton and Concord will require crossing Route 2 and the Assabet River.

The path was named in remembrance of the late State Representative Bruce Freeman, a Republican from Chelmsford, who served from 1969 until he passed away from cancer in 1986. Freeman was a key supporter for the creation of the path during his term. His successor and fellow supporters continued to promote the project and were successful in obtaining the endorsement of the State Legislature in the Spring of 1987.

Approximately 4.6 miles of the Bruce Freeman Bicycle Path will be located in Acton. The path begins in the southeast corner of Town near the Concord Town Line/Route 2 intersection. The railroad right-of-way then runs north alongside Nashoba Brook to the Carlisle Town line, near the junction of Routes 27 and 225. This segment of bicycle path includes a total of six at-grade road crossings and six brook crossings (See Figure 1).

Connectivity is the key to the success of any bicycle path and this project will provide important links both locally and regionally. Development of the bicycle path will be a strong addition to the Town of Acton's transportation network and support future bicycle path connections to adjacent communities. The Acton segment of bicycle path will eventually extend north to the Bruce Freeman Bicycle Path in Westford and extend south to South Sudbury and possibly connect to the Central Mass Rail Trail via the unused railroad right-of-way between South Sudbury and Framingham Center. Once linkages on either end of the Acton segment are made, the path could then be used for alternative forms of commuting to communities between Lowell and Framingham. In the future, the bicycle path will connect to the MBTA Commuter Rail facility in West Concord, and possibly even Framingham Center, thus providing an important link within the regional intermodal transportation network.

1.2 Study Goals

The goal of the feasibility study effort is to assess the feasibility of constructing a shared use bicycle path along the former railroad right-of-way of ConRail, now owned by the Commonwealth of Massachusetts. The study area includes the entire 4.6-mile railroad right-of-way within the Acton town limits (See Figure 1).

This feasibility study will assist the Town of Acton in evaluating the potential impacts of the proposed bicycle path upon the built and natural environment. The study sets forth a realistic assessment of the transportation and recreational potential of the path as well as addresses the design issues inherent to the project area. Ultimately, the study will assist the Town in programming future fiscal expenditures and in identifying local, state, and federal government funding sources, as well as private funding sources, for the design and construction of the trail.

1.3 Study Process

The feasibility study was structured in three phases:

- Phase I – Field Investigation / Analysis of Existing Conditions

  The objective of Phase I of the project was to evaluate existing site conditions along the railroad right-of-way using on-site visual inspection, discussions with local officials, and available State and Town records.

- Phase II – Bicycle Path Conceptual Design

  The objective of Phase II of the project was to develop a bicycle path proposal focused on key design issues based on the information generated during Phase I supplemented with additional analysis.

- Phase III – Development of Implementation Plan

  The objective of Phase III of the project was to address the steps necessary to proceed forward with the design and construction of the project.

The format of this study is based on a "Bicycle Path Feasibility Study Guidance" document prepared by the EOTC, Massachusetts Highway Department (MassHighway), and the Bureau of Transportation Planning and Development in addition to the Scope of Services requested by the Town of Acton in the November 2, 2001 Request for Qualifications / Proposals. The original contract with the Town of Acton was subsequently amended to extend the scope of the feasibility study to include the entire 4.6-mile railroad corridor within the Town limits.

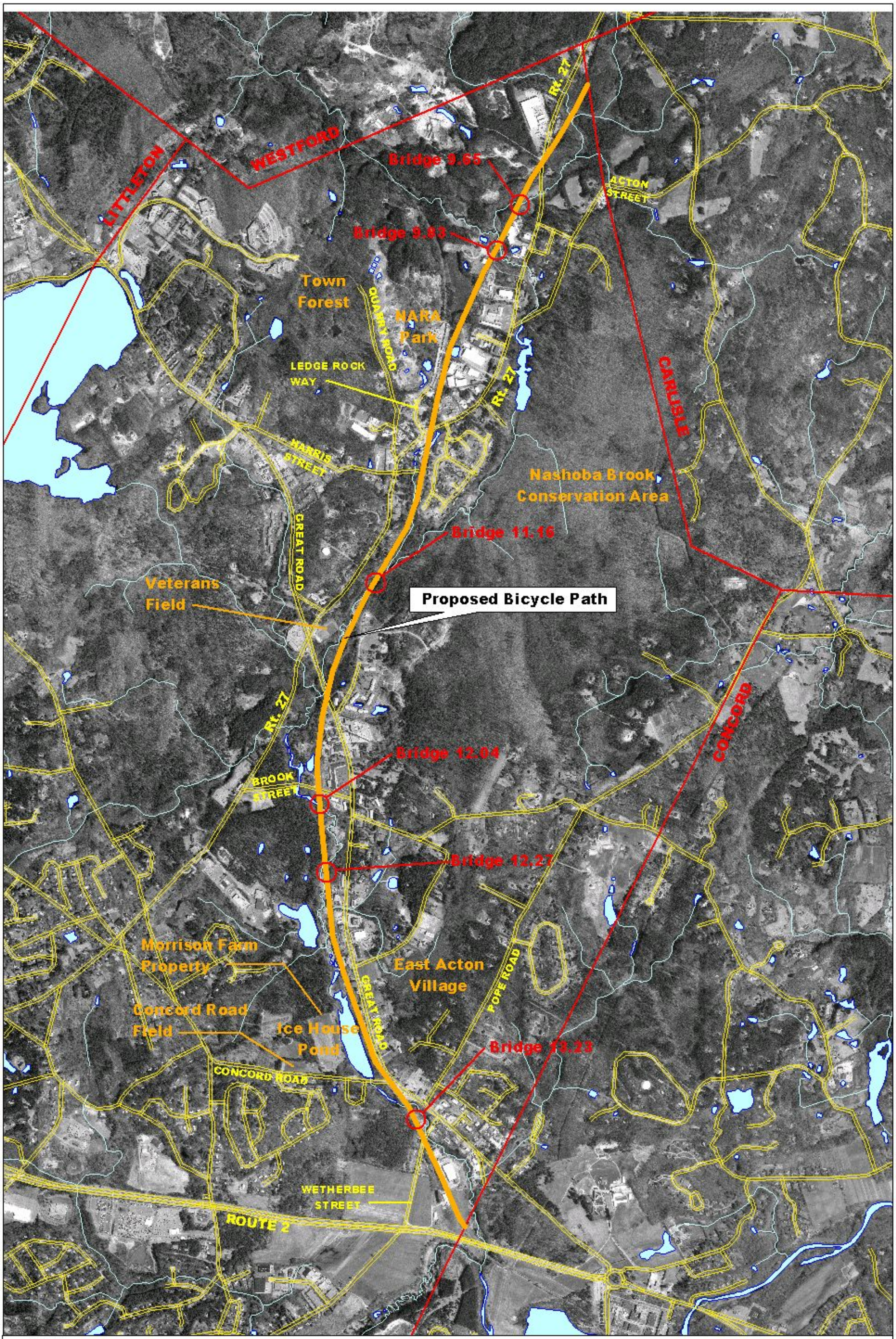


FIGURE 1:
BRUCE FREEMAN BICYCLE PATH
TOWN OF ACTON STUDY AREA

Fay, Spofford & Thorndike LLC
Engineers - Planners - Scientists - Landscape Architects - Surveyors

2 EXISTING CONDITIONS

2.1 Project Demand

The Town of Acton has experienced a significant growth in population and commercial development over the past four decades. Table 1 indicates key information about the Town of Acton. Acton has a total land area of approximately 20 square miles. The Town is primarily residential in character with a population of 20,331 and a population density of 1,017 people per square mile.

Table 1: Town of Acton Profile

2000 Population	20,331
Land Area (Square Miles)	20
Population Density	1,017

Source: 2000 U.S. Census Bureau Data

Acton residents and visitors alike enjoy a wide variety of retail stores and services and a wide range of recreational, historical, and cultural amenities.[2] Acton is conveniently located on Routes 2, 2A, and 27 and in close proximity to Interstate 495 (See Figure 2). Route 2 bisects the Town and serves as a major commuting route into Boston for residents of Acton and towns located to the west and north. Route 2A, also a commuter route, is a commercial, retail, and residential zone which runs east to west through Acton. Residents from the surrounding towns use the variety of retail stores and services located along Route 2A. The Route 2A corridor also contains a large residential component consisting of apartment buildings, condominium complexes, some single-family homes and several large subdivisions. Route 27 crosses Acton north to south and contains a mixture of both residential and commercial/industrial uses. The patterns of development have all had an impact on the traffic volumes along Acton's roadways and the use of open space and recreation lands. The Town recognizes the need to offer alternative means of transportation between in-town and regional destinations including linkages with other transportation facilities.

During the 1998 Town of Acton Master Plan Update process, residents expressed an interest in increasing the number of ways to get around town without having to use a car. Residents supported creating a network of bike paths to connect users with in-town destinations and links to the regional network of bike paths. These opinions were reinforced in May of 2001, when the Open Space and Recreation (OSR) Committee conducted a survey of all of Acton's households to gather residents' input on open space and recreation needs. In the OSR survey, residents were asked to cite the top five recreational facilities most needed in the Town. The respondents overwhelmingly chose bike paths as their top recreation priority.[3]

WESTFORD

LITTLETON

Proposed Bruce N. Freeman Memorial Bicycle Path

225

225

495

Littleton/Route 495 Commuter Rail Station

2

MBTA Commuter Rail Fitchburg Line

2A

27

CARLISLE

ACTON

Proposed Bicycle Path

2

BOXBOROUGH

111

2A

27

South Acton Commuter Rail Station

CONCORD

STOW

62

West Concord Commuter Rail Station

Proposed Assabet River Rail Trail

117

62

MAYNARD

SUDBURY

8000 0 8000 16000 Feet

FIGURE 2:
LOCAL TRANSPORTATION INFRASTRUCTURE

Fay, Spofford & Thorndike LLC
Engineers - Planners - Scientists - Landscape Architects - Surveyors

Most recently, in the Summer of 2001, the East Acton Village Planning Committee (EAVPC), a Town appointed committee, initiated a planning effort to study the existing conditions and future development potential of the East Acton area. The crossing located at Concord Road near Ice House Pond is located within the East Acton Village area. The EAVPC conducted a survey of residents within the existing East Acton Village (EAV) zoning district as well as a broader survey area just outside of the current EAV zoning district. The Committee also distributed a survey at Town Meeting. There were a total of 236 East Acton resident surveys returned and 131 Town Meeting surveys returned as part of the EAV study. One of the survey questions asked residents and Town Meeting attendees to rate their potential rail trail use. Their responses are shown in Table 2.

Table 2: Residents and Town Meeting Responses
Potential Rail Trail Use

Response	Residents %	Town Meeting %
Never	6	6
Seldom	9	11
Occasionally	20	36
Frequently	16	23
Very Frequently	48	18
No Answer	1	6

Source: East Acton Village Planning Committee Survey Results

Without a full understanding of the extent of proposed corridor enhancements and facility connection points, the survey results indicate that the majority of East Acton and Town Meeting respondents would use the bicycle path occasionally to very frequently, with almost half of the East Acton residents saying they would use the trail very frequently. The EAVPC study only represented a small snapshot of the potential users as it is likely that, when constructed in its entirety, the Bruce Freeman Bicycle Path will draw users from both within Acton and the broader regional area.

It is anticipated that many people would be parking their vehicles and using the bicycle path to access retail/service establishments and recreational facilities. Once completed, the Bruce Freeman Bicycle Path will help to alleviate the parking pressure associated with the large events at North Acton Recreation Area (NARA). Many events, such as the 4th of July celebration, attract more than 8,000 attendees. Residential areas and complexes abutting or in close vicinity to the bicycle path will be able to directly access the path in lieu of driving to a designated parking area. With the appropriate connections and safety enhancements, the bicycle path could provide users with improved access to Great Road (Route 2A/119) and Route 27, two busy transportation corridors characterized by employment centers, commercial developments, and retail/service establishments. The path will travel through both the North Acton Village District and the established East Acton Village District.

Once the linkages on either end of the Acton portion of the Bruce Freeman Bicycle Path are made, the path could then be used for alternative forms of commuting to communities between

Lowell and Sudbury. Table 3 indicates the modes of transportation that Acton residents use to get to work. According the 2000 U.S. Census Data, over 80 percent of Acton residents drive alone to work and about 12 percent either use public transportation or carpool. The percentage of workers who walk or bicycle to work is approximately 1.4 percent in Acton. For comparison purposes, 2.3 percent of workers within the State of Massachusetts walk or bicycle to work.[4]

Table 3: Transportation Modes Used to Get to Work By Workers 16 and Over

Means of Transportation	#	%
Drove Alone	8,851	80.9
Carpooled	814	7.5
Public Transportation	495	4.5
Bicycle	16	0.2
Walked	136	1.2
Other means	14	0.1
Work at Home	616	5.6

Source: 2000 U.S. Census Journey-to-Work Data

Acton is one of the seven communities that the proposed Bruce Freeman Bicycle Path will cross through. The other communities include, from north to south, Lowell, Chelmsford, Westford, Carlisle, Concord, and Sudbury. Table 4 indicates both the number and percentage of people by community who bicycle and walk to work. The percentage of residents who bicycle to work is greatest in the Town of Concord (0.38). Lowell and Acton follow Lowell at 0.31 percent and 0.15 percent, respectively. The percentages of resident bicyclists in Chelmsford, Westford, Carlisle and Sudbury are negligible.

Table 4: Number and Percentage Bicycling and Walking to Work By Community, 2000

	Bicycling		Walking	
Community	#	%	#	%
Lowell	143	0.31	2139	4.57
Chelmsford	5	0.03	117	0.65
Westford	0	0.00	60	0.56
Carlisle	0	0.00	39	1.66
Acton	16	0.15	136	1.24
Concord	28	0.38	205	2.78
Sudbury	0	0.00	135	1.70
Total	192		2831	

Source: 2000 U.S. Census Journey-to-Work Data

As shown in Table 4, the percentage of people who walk to work is greatest in the City of Lowell (4.57). In Concord, 2.78 percentage of people walk to work. Residents in Carlisle and Sudbury each account for about 1.70 percent with Acton at about 1.24 percent. The percentages in Westford and Chelmsford each account for less than one percent.

These percentages are estimates based on the questionnaire distributed by the U.S. Census Bureau to workers over 16 years of age. All students, including those over 16, are excluded from the data set. Means of transportation to work refers to the principal mode of travel that the worker uses to get from home to work. The census questionnaire specially asks for the mode used for the longest part of the trip to work. Therefore, for example, bicycling or walking to a public transit stop would not be classified as a bicycle or pedestrian trip unless the trip was longer than the public transit trip. Another factor to consider is that data collection occurred in the early spring and therefore the pedestrian and bicycle volumes may not be truly representative of peak season volumes.[5]

2.2 Project Area Location

The Lowell Secondary Track railroad right-of-way runs north to south through the Town of Acton as shown in Figure 1. The Acton segment of the Bruce Freeman Bicycle Path includes a total of six at-grade road crossings and six brook crossings.

The history of rail service on the right-of-way was characterized by change. From its charter in 1870 as the Framingham and Lowell Railroad, the railroad was subsequently sold and reorganized into the Lowell & Framingham Railroad in 1881. The line was then merged into the Old Colony Railroad only to later become part of the New Haven Railroad System in 1893. It was not until 1969 when the rail line operated along this right-of-way was acquired by the Penn Central Transportation Company and renamed the Lowell Secondary.

The Lowell Secondary Track was always a single-track line except at former station sites and on the West Concord-North Acton segment. The section of right-of-way between West Concord and Route 27 in North Acton was once shared with the Nashua, Acton & Boston Railroad (NA&B). The NA&B track was removed in the late 1920's and the remaining Lowell Secondary Track was not relocated.[6]

According to the railroad valuation maps, the approximate centerline of the track is the established baseline for the right-of-way. The following description of the railroad right-of-way is based on a review of the right-of-way and track maps for the rail line.[7]

Acton/Concord Town Line to Wetherbee Street (Station 671+50± to Station 692+00±)

The railroad right of way located in Acton begins at the Acton/Concord Town Line near Route 2. The right-of-way continues northward through the reformatory fields to the Wetherbee Street crossing in East Acton. The right-of-way is 33 feet wide on either side of the baseline. There is one tile pipe culvert crossing beneath the right-of-way near the Acton/Concord Town Line.

Wetherbee Street to Concord Road (Station 692+00± to Station 704+75±)

The railroad right-of-way is 66-feet wide from the at-grade Wetherbee Street intersection to Station 696+80±. The right-of-way is 33 feet wide on either side of the baseline. At Station 696+80±, the right-of-way widens an additional 8.25 feet to the east (total baseline offset of 41.25 feet) for a distance of approximately

240 feet to the first crossing over Nashoba Brook. On the northern side of the brook crossing, the right-of-way edge is offset a total of 49.5 feet for approximately 380 feet to the intersection with Concord Road at Station 704+75±. Just south of the Concord Road intersection, there used to be a sluiceway running beneath the rail bed that connected Ice House Pond to a former mill located on Great Road/Route 2A.

Concord Road to Brook Street (Station 704+75± to Station 764+50±)

The railroad right-of-way crosses Concord Road approximately 250 feet west of Great Road (Route 2A/119) at an acute angle of approximately 50 degrees. The Town owns two parcels of land on the northern side of the Concord Road intersection; a 0.62 acre parcel of the western edge of the right-of-way alongside Ice House Pond and a 0.68 acre parcel on the eastern side of the railroad right-of-way alongside Great Road (Route 2A/119). These two parcels were previously part of the railroad right-of-way. A landscaping plan is currently being developed for these parcels as part of the East Acton Village planning efforts.

The railroad right-of-way is 66 feet wide from the at-grade Concord Road intersection to the Brook Street intersection. The right-of-way is 33 feet wide on either side of the baseline. The right-of-way runs parallel alongside Nashoba Brook to the west and Great Road/Route 2A to the east. There are a total of eight culverts shown on the right-of-way and track map, varying in terms of size and type, and two private crossings shown on the plans. These private crossings were likely used as cow paths or farm crossings during the time when the railroad was still active.

Nashoba Brook crosses the rail bed twice through this stretch of right-of-way, at Station 749+35± and Station 761+19±. At the second brook crossing, the right-of-way extends westward alongside Nashoba Brook to include a triangular parcel of land from Station 762+22± to Station 763+25±. At Station 763+25±, the right-of-way returns to a width of 66 feet. The historic Isaac Davis Trail, otherwise known as the "Line of March," crosses the rail bed between the brook crossing at Station 761+19± and the intersection with Brook Street.

Brook Street to Route 2A (Station 764+50± to Station 782+80±)

The railroad right-of-way crosses Brook Street at an acute angle of approximately 70 degrees at Station 764+50±**.** The railroad right-of-way is 66-feet wide from the at-grade Brook Street intersection to Station 777+75±. The right-of-way through this section is 33 feet wide on either side of the baseline.

A pond is located on private property alongside the western edge of the railroad right-of-way. The pond is approximately 350 feet north of the Brook Street intersection. There are two culverts shown on the right-of-way and track map, a wood box culvert at Brook Street and a stone box culvert connection to the pond. At Station 777+75±, the right-of-way widens an additional 16.5 feet to the west (total baseline offset of 49.5 feet) for a distance of approximately 500 feet to the Great Road (Route 2A/119) intersection.

Route 2A to Route 27 (Station 782+80± to Station 839+00±)

The railroad right-of-way crosses Great Road (Route 2A/119) at an acute angle of approximately 40 degrees at Station 782+80±**.** The railroad right-of-way is 66-feet wide from the Great Road (Route 2A/119) intersection to Station 809+28±. The right-of-way through this section is 33 feet wide on either side of the baseline. The railroad crosses over Nashoba Brook at Station 808+57±.

At Station 809+28±, the right-of-way narrows 6 feet to the east (total baseline offset of 27 feet). The right-of-way continues to reduce in a linear manner to a total baseline offset of 20 feet at Station 813+50± to Station 814+00±. A footpath on the eastern edge of the right-of-way near Station 814+00± leads to the site of a 19th-century pencil factory site and the 123-acre Nashoba Brook Conservation Area. From Station 814+00± to Station 815+46±, the right-of-way returns to 33 feet wide on either side of the baseline. Between Stations 817+50± and 819+20±, the eastern edge of the right-of-way extends out with in a triangular shape with a 70-foot offset at Station 819+20±. The eastern edge right-of-way stays at a width of 33 feet from Station 819+20± to the intersection at Route 27.

At Station 815+46±, the western edge of the right-of-way widens to a total offset of 49.5 feet and continues to widen to a total offset of 66 feet at Station 821+20±. At Station 821+20±, the western edge of the right-of-way reduces from 66 feet to 49.5 feet for a distance of 100 feet. At Station 822+20±, the western edge right-of-way reduces from 49.5 feet back to 33 feet and stays at a width of 33 feet to the intersection at Route 27.

There are a total of nine culverts shown on the right-of-way and track map, varying in terms of size and type, and two private crossings shown on the plans.

Route 27 to Carlisle Town Line (Station 897+00± to Station 916+00±)

The railroad right-of-way continues from the Route 27 crossing at Ledge Rock Way northward to the Acton/Carlisle town line. This segment of right-of-way includes a bridge crossing of Nashoba Brook at Station 878+66± and Butter Brook at Station 888+10±. There is also another at-grade crossing of Route 27 near Station 897+00±. After this crossing, the right-of-way includes a triangular outcrop of land to the west. Near Station 904+33±, the right of way transitions to a cross section width of 49.5 feet on either side of the baseline. The right-of-way remains 99 feet wide to Station 914+11.5, where it narrows to 66 feet on the approach to the Carlisle Town Line. There are two stone box culverts and two private crossings shown on the right-of-way and valuation maps.

2.3 Project Area Physical Description

2.3.1 Length & Width

The study area of the Acton portion of the Bruce Freeman Bicycle Path extends from the Concord Town line north to the Carlisle Town line. The Lowell Secondary Track right-of-way is 66 feet wide for most of its length. In North Acton, the right-of-way narrows to a width of 53 to 60 feet for a stretch of approximately 470 feet. The right-of-way is also wider than 66 feet in some locations along the railroad and includes a few outcrops of land to the east and west of the right-of-way. The approximate centerline of the existing track is the established baseline for the right-of-way. The proposed bicycle path will be located along the alignment of the existing track. The rail bed varies in width depending upon the adjacent cut and fill slopes and bordering wetlands.

2.3.2 Topography

The corridor is lined with thick vegetation and includes significant cut and fill slopes, drainage swales, culverts, wetlands, and other obstructions. Nashoba Brook and bordering wetlands align most of the right-of-way. The segments of right-of-way running parallel to Great Road (Route 2A/119) and Route 27 are bordered by primarily commercial and some residential uses. The remainder of the right-of-way is primarily located adjacent to conservation and wetland areas.

2.3.3 Presence of Environmental Resources

The proposed bicycle path is located in an environmentally sensitive area characterized by the meandering Nashoba Brook, an abundance of wetlands and floodplain, and the Zone II aquifer recharge area. The Nashoba Brook greenbelt extends for the full length of Nashoba Brook and encompasses the rail corridor. Many parcels alongside of the rail corridor have high conservation and recreation potential.

Figure 3: Nashoba Brook

Nashoba Brook and Ice House Pond Drainage Basin Ecosystem [8]

The proposed bicycle path is entirely located within the Nashoba Brook Drainage Basin. Approximately 75% of the watershed area for Nashoba Brook is located in Acton. The basin serves as a critical habitat for many common wildlife species, both mammal and bird, and is characterized by native red maple swamp forest type. The Nashoba Brook Basin is a crucial part of the unbroken chain of open space parcels producing one of the most significant contiguous natural land and riparian corridors in Acton. As shown in Figure 3, the blend of both stream corridor and forested parcels in the Nashoba Brook Greenbelt create a habitat suited for a variety of wildlife.

Nashoba Brook and Butter Brook converge in North Acton and flow south. The section of Nashoba Brook running south towards Great Road (Route 2A/119) has open marsh and floodplains that have been cited as critical habitat for wood turtles. The wetlands habitat running north from Route 2A, near the Veterans Memorial Field complex, is an established wood turtle habitat included in the 2000-2003 Natural Heritage and Endangered Species Map. The Brook and its surrounding wetlands are home to a variety of wildlife including beaver, otter, mink, and fisher.

Between Great Road/Route 2A and Ice House Pond, the Nashoba Brook riverine ecosystem forms a series of deep pools with steep banks and broad floodplains that are known for their trout population. This section of Nashoba Brook and its surrounding wetlands are populated by both beaver and otter. South of the Brook Street crossing, the western side of the railroad right-of-way is a mix of forested uplands, open pastureland and floodplain/marsh. Nashoba Brook meanders southwards alongside the railroad right-of-way to Ice House Pond.

Ice House Pond, an impoundment of Nashoba Brook, and its drainage basin and connected open marsh represent important wildlife habitat for a variety of migratory ducks, as well as nesting habitat for fowl species. The Ice House Pond Basin, in combination with the adjacent Morrison Farm and Woodlawn Cemetery property, create a contiguous natural land corridor to the Acton Arboretum. This wildlife corridor is used by white-tailed deer, coyote, red fox and fisher.

Beyond Ice House Pond, Nashoba Brook continues in a southerly direction towards the Assabet River, crossing the railroad right-of-way between Concord Road and Wetherbee Street. The Assabet River flows through the southeast corner of Acton and Acton's waters all drain into the Assabet. Acton is one of the fourteen towns located in the Sudbury-Assabet-Concord (SuAsCo) River Basin.

Groundwater [9]

The state has classified all of Acton's surface waters, with the exception of Nagog Pond, as Class B waters. This classification indicates the waters may be used for water supply with appropriate treatment. Acton relies solely on Town wells and pumps its water from groundwater aquifers. Acton's streams and associated wetlands provide an estimated average of 65% of the recharge of the aquifers. The majority of the bicycle path project study area is located in the Zone 2 aquifer recharge area for Conant Wells I & II, which are located in close proximity to the rail corridor.

2.3.4 Hazardous Waste

State, federal, and national databases were reviewed to identify known and potentially contaminated sites located within the study area. The databases listed in Table 5 were searched and obtained by Environmental Data Resources, Inc. (EDR).

Table 5: Environmental Database List

Database	Description
Federal & National Databases	
CERC-NFRAP	No Further Remedial Action Planned sites that have been removed from CERCLIS
CERCLIS	Hazardous Waste Site reported to EPA
CONSENT	Superfund Consent Decrees
CORRACTS	Hazardous waste handlers with RCRA corrective action activity
Delisted NPL	Sites that have been removed from the NPL
ERNS	Emergency Response Notification System
FTTS	FIFRA / TSCA Tracking System
FINDS	Facility Index System – points to other federal sources
HMIRS	Reported Spill Incidents
MINES	Mines Master Index File
MLTS	Sites which possess or use radioactive materials
NPL	National Priority List or Superfund Sites
NPL Liens	Federal Superfund liens
PADS	Generators, transporters, storers and disposers of PCBs
RAATS	Records of RCRA enforcement actions
RCRIS-TSD	Sites that transport, store or dispose of hazardous waste
RCRIS-LQG	RCRIS Large Quantity Generator
RCRIS-SQG	RCRIS Small Quantity Generator
ROD	Records of Decision of permanent remedy at Superfund sites
SWF/LF	Solid Waste Management Facilities
TRIS	Facilities which release toxic chemicals to the air, water and land
TSCA	Manufacturers and importers of toxic chemicals
State Databases	
AST	Summary listing of all registered above ground tanks
Coal Gas	Former manufactured gas sites
LUST	Leaking underground storage tanks
Release	MA release tracking database
SHWS	Hazardous waste and petroleum sites within the Release database
SPILLS	Oil and hazardous material response log/Spill Report
State Landfill	Solid waste landfills
UST	Summary listing of all underground tanks registered with State Fire Marshall

The study area has a high density of commercial and industrial uses along sections of the railroad right-of-way. A review of the EDR database search results did not indicate any overt sources of contamination within the limits of the rail corridor itself. However, the review did reveal current and past environmental contamination issues on sites located either adjacent to or in close proximity to the rail corridor. Each site was evaluated for its potential impact to the project. This evaluation was based on the information provided in the databases, the type of site, and its proximity to the project.

Sites of known contamination are a greater concern than sites with potential contamination. Sites of known contamination include those listed in the State Hazardous Waste, LUST, CERCLIS, and NPL databases. Sites that use or store hazardous materials, or generate hazardous waste, but have not necessarily released any into the environment are also of concern where they are in close proximity to the right of way. These include the sites listed in the RCRIS-SQG and UST databases. Table 6 lists the sites within the Releases Database that are classified either as State Hazardous Waste Sites (SHWS) or sites with a Leaking Underground Storage Tank (LUST) listed as its source. Figure 4 provides a locus map of the sites by EDR ID number. A review of the CERCLIS and NPL databases did not uncover any sites located within the project area.

Table 6: Environmental Contamination Issues in Study Area

EDR ID	Site Name / Address	Dbase Source	Site Status	Phase / Class	Release Tracking Number
1	1009 1019 1023 Main St Prop	SHWS	LSPNFA		2-0000008
5	Across From Wheeler Lane 836 838 Main Street	SHWS	RAO	Phase II	2-0011663
5	Wickes Lumber Fmr	LUST	RAO	A2	2-0013663
3	Deck House Inc. 930 Main Street	SHWS / LUST	Tier 1C	Phase V	2-0010612
8	Deck House Inc. 848 Main Street	SHWS	RAO	A2	2-0010690
9	Pitt Construction 816 Main St.	LUST	Tier 1C		2-0012713
11	Shell Service Station 341 Great Rd.	LUST	Tier 1C	Phase IV	2-0000848
11	Sunoco Service Station 336 Great Rd.	SHWS	REMOPS	Phase V	2-0010259
13	Hydraulic Spill 278 Great Rd.	SHWS	RAO	A2	2-0013174
13	0.5 Miles East of Rte. 27 274 Great Rd.	SHWS	RAO		2-0010557
13	No Location Aid 274 278 Great Road		RAO	A2	2-0010432
13	Buried Drum 274 Great Rd.	SHWS	RAO	A2	2-0012025
15	Acton Lincoln Mercury 196 Great Rd.	SHWS	RAO	A2	2-0010766
16	Estate of Mildred Files 180 Great Rd.	SHWS	RAO	A2	2-0013331
17	Billings Realty 162 Great Rd.	LUST	RAO	A2	2-0011924
18	135-137 Great Road	LUST	WCSPRM		2-0000792
18	Acton Toyota 135 Great Rd.	SHWS	RAO	A1	2-0014417
20	East Acton Mobil PPO 44 Great Road	SHWS / LUST	RAO	Phase V	2-0000253
20	Mobil Sta 101-90 44 Great Road	SHWS	RAO		2-0013870

Source: Environmental Data Resources, Inc. (EDR) and Massachusetts DEP Bureau of Waste Site Cleanup Searchable Sites Database.[10]

Sites are split into two general categories, Tier 1 (A, B & C) and Tier 2, based on the risk they present. Tier 2 site remediation activities can be addressed under the signature of a licensed site professional (LSP) without any direct Massachusetts Department of Environmental Protection (MA DEP) involvement. Tier 1 sites must have MA DEP involved, approving every step in the remediation process. Phase IV indicates that that the site has implemented the selected remedial / cleanup plan. Phase V indicates that long term treatment processes have been implemented and monitored to track cleanup progress.

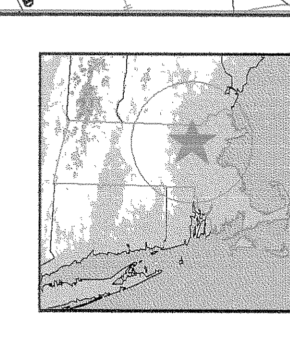
Sites with an RAO status means that a Response Action Outcome Statement (RAO) has been submitted. A RAO Statement asserts that the response actions were sufficient to achieve a level of "no significant risk" or at least ensure that all substantial hazards have been eliminated. A Class A RAO means that a permanent solution has been achieved with Class A1, A2, and A3 indicating the subsequent level of contamination. A Class A1 RAO indicates that contamination levels have been reduced to background. A Class A2 RAO indicates that contamination levels are above background but below cleanup standards. A Class A3 RAO indicates that contamination levels are higher than most stringent cleanup standards and an Activity & Use Limitation (AUL) has been placed on the property. LSPNFA indicates that response actions were conducted and an LSP has determined that no further action was needed for the site. REMOPS indicates that a remedial system, which relies upon active operation and maintenance, is being operated for the purpose of achieving a permanent solution. WCSPRM indicates that a Waiver Completion Statement has been submitted to DEP. A Waiver Completion Statement is similar to a RAO.

It is unlikely that any of the environmental contamination issues located in the study area would preclude the construction of the Acton portion of the Bruce Freeman Bicycle Path. However, it is recommended that a more detailed investigation be conducted during the preliminary design phases of the project. If structural borings are required, an environmental sampling program could be undertaken at the same time. It will also be important to take the necessary environmental precautions during construction activities.

Environmental Data Resources, Inc.
1-800-352-0050

Study Area For

Acton Bike Path



Acton, MA

- Listed Sites
- Earthquake Epicenters (Richter 5 or greater)
- Search Boundary
- Roads
- Major Roads
- Waterways
- Railroads
- Contour Lines
- Pipelines
- Powerlines
- Fault Lines
- Water
- Superfund Sites
- 100-Yr Flood Zones

N

0 1/2 1

Scale in Miles

899225.1s - 18 Dec 02

2.4 Project Area Use Description

2.4.1 History of Rail Service [11]

The rail line was chartered in 1870 as the Framingham and Lowell (F&L) Railroad and opened in November 1871. Ten years later, the F&L Railroad was sold at foreclosure due to a lack of traffic. The railroad was reorganized into the Lowell & Framingham Railroad and subsequently merged into the Old Colony Railroad. In 1893, the company became part of the New Haven Railroad system. The line operated as part of this system until 1969, when it was acquired by the Penn Central Transportation Company and renamed the Lowell Secondary Track.

At this time, the Lowell Secondary Track served a nightly freight train traveling from South Boston to Lowell via Readville, Walpole, and Framingham. It continued to service this route until Penn Central declared bankruptcy in June of 1970. Consequently, there was a move to increase the efficiency of the railroad by consolidating traffic onto fewer lines. As a result, the Lowell Secondary Track began to only service a local freight train between Framingham and Lowell in 1973.

In 1976, the Consolidated Rail Corporation (Conrail) system was implemented to take over the operations of the key Penn Central lines. Because the traffic on most of the Lowell Secondary Track was below average, Conrail only acquired the 4.7 miles from Framingham Center to South Sudbury. The Boston and Maine Corporation purchased the 1.6 miles from the Lowell yard to U.S. Route 3 in Chelmsford that continued to serve several customers.

In the 1970's, most of the traffic on the Lowell Secondary Track constituted shipments of building materials to distributors in North Acton and Chelmsford. It was expected that traffic would continue to increase along the line and therefore the Commonwealth of Massachusetts decided to subsidize service from South Sudbury to Chelmsford Center. The EOTC leased the track from Penn Central and contracted with Conrail to provide service. Unfortunately, by 1979, it became clear that the Commonwealth's predictions would not come to fruition due to a prolonged economic downturn in the building industry. The Lowell Secondary Track became the least cost-effective line in the Commonwealth's rail subsidy program and service was suspended in April 1982. The Commonwealth did however decide to purchase the segments of rail line in an effort to preserve the right-of-way for other public uses. In April 1982, the Commonwealth purchased the segment from West Concord to a point 5.3 miles north in North Acton from Penn Central. In November 1982, the Commonwealth also purchased the segments of railroad right-of-way from South Sudbury to West Concord, North Acton to Chelmsford Center, and the link between Chelmsford Center and Route 3.[12]

2.4.2 Railroad Right-of-Way

Rail operation has officially ceased along the Lowell Secondary Track right-of-way, with the exception of a segment located in West Concord. The right-of-way is managed by the Executive Office of Transportation and Construction (EOTC) on behalf of the Commonwealth

of Massachusetts. The EOTC has indicated that the Commonwealth has a strong interest in preserving the corridor for future transportation uses. Although

In 1987, the Central Transportation Planning Staff (CTPS), the Metropolitan Area Planning Council (MAPC), and the Northern Middlesex Area Commission (NMAC) jointly published the Lowell-Sudbury Bicycle Path Feasibility Study. According to this study, the EOTC indicated that they supported the proposed bicycle path and may be willing to license the right-of-way to the Department of Conservation and Recreation (DCR) (formerly the Department of Environmental Management) or to the Towns. Follow-up conversations with the EOTC indicate that the agency is still supportive of the use of the railroad right-of-way for an alternative transportation facility / bicycle path and they are open to discussing all scenarios with the Town.[13] A letter from the EOTC is included on the following page.

In order for a municipality, such as Acton, to pursue plans to convert the railroad right-of-way to a bicycle path, the municipality must submit a formal application to the EOTC stating their desired use and plans for the railroad corridor. Pending approval from the EOTC, the municipality is granted a license agreement to design, construct, and maintain the bicycle path. The EOTC supplies the municipality with access to the land but does not financially contribute to the project.[14] The bicycle path license agreement does not grant exclusive rights with respect to the property. The EOTC will require that the bicycle path design seek to accommodate existing lease, license, easement and other agreements. If an existing agreement poses a problem to bicycle path design and construction, the EOTC will meet with all parties to see if an equitable solution can be reached that satisfies all parties.[15] Under current policy, the term of the license agreement would be one year with an automatic renewal unless either party gave the other 30 days notice. Language in the agreement also reserves the EOTC's right to take back the corridor for transportation purposes, if necessary.

Under current EOTC policy, the agreement for the Acton portion of the Bruce Freeman Bicycle Path would be structured differently than the agreement used for the Lowell to Westford section. Use of the Commonwealth of Massachusetts owned right-of-way for the northern section of the path was issued under a Memorandum of Understanding (MOU) between MassHighway, DEM, and the towns. Conversations with the EOTC indicate that the agency does not use MOUs for property agreements any longer.

The deed transferring ownership of the railroad right-of-way from ConRail to the Commonwealth of Massachusetts, acting through the Executive Office of Transportation and Construction was executed through two separate deeds. The first deed agreement was signed on May 3, 1982 and covers the section of railroad right-of-way from West Concord north to Bridge No. 9.83 over Nashoba Brook in North Acton.[16] The second deed agreement was signed on November 23, 1982 and covers the section of railroad right-of-way from Bridge No. 9.83 over Nashoba Brook in North Acton north to Chelmsford Center, as well as the sections from South Sudbury to West Concord and Chelmsford Center to Route 3.[17] The deed signed in May specifically references four easements for facilities along the Lowell Secondary Track, United States Railway Association Line Code 4130, within the Town of Acton. All four of the easements listed in Table 7 are located within the project area.

The Commonwealth of Massachusetts
Executive Office of Transportation and Construction
Ten Park Plaza, Boston, MA 02116-3969

Mitt Romney
Governor

Kerry Healey
Lieutenant Governor

Daniel A. Grabauskas
Secretary of Transportation

December 23, 2003

Mr. Tom Tidman
Director, Natural Resources
Town of Acton
472 Main Street
Acton, MA 01720

RE: Proposed Bruce Freeman Memorial Bicycle Path
Town of Acton

Dear Mr. Tidman:

I am writing on behalf of the Executive Office of Transportation and Construction to confirm our support for the Town's proposed development of the 4.6 mile segment of the Bruce Freeman Memorial Bicycle Path, an alternative transportation facility, through the Town of Acton.

EOTC has been working cooperatively with the Massachusetts Highway Department, the Department of Conservation and Recreation, municipal governments and funding agencies over the past several years to forward the development of the Bicycle Path through the cities and towns along the 22-mile portion of the Lowell Secondary owned by the Commonwealth / EOTC. We have recently completed our review of the final draft Feasibility Study related to this project, and appreciate the opportunity to review and comment on the study during its development.

EOTC looks forward to working with the Town of Acton, MHD, and various state and federal agencies to develop appropriate documents for the development and operation of the Acton portion of the Bicycle Path and secure funding for its construction. We anticipate the continuation of our cooperative efforts in order to resolve outstanding issues relating to the design and construction of the Bicycle Path in the coming months.

Sincerely,

Maeve Vallely - Bartlett
Manager of Rail

Telephone (617) 973-7000 TDD (617) 973-7306 Telefax (617) 523-6454

Table 7: Right-of-Way Easements

	Licensee	Date of Agreement	Location	Type of Occupation
(1)	New England Telephone & Telegraph Co.	8/18/1926	North Acton Groton Road	Guy wire and anchor
(2)	Boston Edison and New England Telephone & Telegraph Co.	11/17/1948	North Acton Main Street	Aerial power line
(3)	Boston Edison Co.	10/4/1961	STA. 875+20	Aerial power line with appurtenances
(4)	Boston Edison Co.	8/21/1950	STA. 875+20	Aerial power line

Source: Deed Book 14609, Page 307, Middlesex South District Registry of Deeds.

The facility easements were executed as license agreements that were retained by Penn Central when the property was conveyed to the EOTC. It is the EOTC's understanding that Penn Central retained the right to any revenue from these agreements and reserved the right to convey them as easements. The EOTC has certain protections in the event that the occupancies were conveyed as easements. It is likely that these occupations still remain in place either under a license agreement or grant of easement with Penn Central.[18]

Based on correspondence with the EOTC, the agency has recently entered into three legal agreements for private use of the Penn Central right-of-way within the Acton town limits. The EOTC entered into an access easement agreement with John D. and Stacy G. Durkin of Wetherbee Street and into license agreements with Acton Indoor Sports and Acton Lincoln Mercury. The agreements granted to the Durkins and Acton Lincoln Mercury are located within the project area.

The difference between a license agreement and access easement agreement depends upon the specific language of the agreements and/or easement documents. A license agreement typically grants the right to use the property for a specific purpose and EOTC licenses are generally terminable upon 30 - 90 days written notice. An easement is a much more definitive grant of rights (generally limited in scope and use) and is generally (but not always) perpetual. Grants of easement by the EOTC often contain clauses for termination upon the happening of some event, but the termination of the easement will have legal and potentially financial implications for EOTC.

The EOTC granted an access easement to John D. Durkin and Stacy G. Durkin of 18 Wetherbee Street on January 11, 2000.[19] A copy of the access easement agreement can be obtained from the EOTC through a Freedom of Information Act Request. The Durkin property is located at the rail crossing on the southern side of Wetherbee Street in East Acton. The agreement grants the Durkins an access easement to construct a driveway and pass across the railroad right-of-way for the purposes of ingress and egress from their property. The easement is for a 30-foot wide strip of approximately 500 feet, containing a total of approximately 14,821 square feet. The agreement states that the EOTC reserved itself an easement over the entire easement area for transportation purposes. Therefore, providing the Durkin's easement is inconsistent with the transportation easement, the EOTC may exercise its right to extinguish the Durkin's easement. Under this circumstance, the EOTC must issue a

one-year written notice of intent to abrogate the access agreement. At the time of the revocation, the EOTC must also reimburse the Durkins' for the fair market value of the property, which the Durkins' originally purchased for a fee of $6,000. The EOTC has requested that the design of the bicycle path seek to permit either the shared use of this portion of right-of-way or shared use of the Durkin easement area to avoid extinguishing the easement.[20] This issue will need to be reviewed in more detail during the preliminary design stages of the project.

The EOTC granted a license agreement to Acton Lincoln Mercury of 196 Great Road on May 30, 2001.[21] The agreement grants Acton Lincoln Mercury with a temporary license to install and take period samples from three temporary six inch PVC monitoring wells located within the rail corridor. The temporary monitoring wells are located in a Massachusetts Department of Environmental Protection (MA DEP) Response Action area and subject to all applicable MA DEP response action regulations and laws. The monitoring wells are installed approximately 12 feet west of the existing railroad tracks within the right-of-way. The license agreements specifically stated that the locations should not interfere with any potential use of the easement as a bicycle path. However, if the existing railroad tracks are not removed during the construction of the bicycle path, it is likely that the monitoring wells will be located within the proposed shoulder. The license agreement is for a term of two years from the effective date at an annual fee of $250.00, unless terminated prior as provided for in the agreement, and can be extended upon written agreement by the parties. A copy of the license easement agreement can be obtained from the EOTC through a Freedom of Information Act Request.

Within the railroad right-of-way study area, there are also a series of "private crossings" shown on the railroad valuation maps. It is likely that many of these crossings were cow paths, etc. at the time the maps were drafted and are no longer in existence. The nature of the rights of these private crossings will need to be assessed on a case by case basis with the assistance of EOTC. The only way to validate the legality of the private crossings as they currently exist would be to review the original deeds into the Railroad (i.e., what rights were reserved by the original Grantor), as well as any dispositions / rights granted by the Railroad after its initial acquisition, and to evaluate these documents in their current context.[22] During the design and construction phases of the project, the EOTC will advise the Town which crossings will have to remain.

2.4.3 Description of Activity Abutting the Project Area

Adjacent land uses along Route 2A/Great Road include primarily commercial and some residential uses. The remainder of the path is primarily located adjacent to conservation and wetland areas. Privacy of adjacent uses will be established by using mitigation measures such as fences, rail fences or trees and shrubs, wherever appropriate.

2.4.4 Physical Encroachments Upon the Project Area

There are seven physical encroachments upon the railroad right-of-way located within the project area. Only one of the encroachments was legalized by a formal access easement granted to the property owner by the EOTC. Over time, the other three property owners located adjacent to the railroad right-of-way have encroached without prior approval from the

EOTC. Resolving these encroachments would involve identifying the encroachment and requiring that the person/business occupying the property either enter into an agreement with the EOTC for their use of the property, or vacate the property (remove the encroachment).[23] Based on a site walk by the consultant team and discussions with local municipal officials, the most significant encroachments identified were at the following locations:

Acton Indoor Sports Property

Figure 5: Acton Indoor Sports

The EOTC granted a license agreement to Indoor Sports Management, Inc., otherwise known as Acton Indoor Sports, on June 11, 2001.[24] The Acton Indoor Sports property is located at 30 Great Road, which is adjacent to the railroad right-of-way between Route 2 and Wetherbee Street. The license agreement specifically states that Acton Indoor Sports has permission to maintain and ultimately remove two light poles and electric service, including any appurtenances thereto, located within the railroad right-of-way. The license agreement also makes note of the fact that the two light poles and electric service were installed without prior approval from the EOTC. A site walk revealed that the tracks had been paved over and that a turf surface, chain link fence, and sports netting system (suspended between three poles) had been installed within the railroad right-of-way. There were also piles of debris within the right-of-way.

Durkin Property

Figure 6: Durkin Access Drive Off Wetherbee Street

Figure 7: Debris Along Durkin Access Drive

The EOTC granted an access easement to John D. Durkin and Stacy G. Durkin of 18 Wetherbee Street on January 11, 2000.[25] The Durkin property is located at the rail crossing on the southern side of Wetherbee Street in East Acton. Conversations with local officials indicate that the Durkins are currently using the railroad right-of-way as an access drive for their commercial trucking business, Onyx Transportation. A site walk revealed that the tracks had either been removed or paved over. In addition to the use of the right-of-way as an access drive, there were also piles of debris including metal pipes, granite stones, earth material, and a box trailer.

Bursaw Gas & Oil Company

Figure 8: Bursaw Encroachment

Bursaw Gas & Oil Company is located at the rail crossing at the southern side of Concord Road at the intersection with Great Road (Route 2A/119) in East Acton. Bursaw Gas & Oil currently parks their gas and oil trucks perpendicular to the railroad right-of-way on a day-to-day basis. The rear of the trucks are encroaching upon the right-of-way and often physically protrude over the existing tracks.

Copp Property

The Copp Property is located at 124 Great Road on the northern side of the Concord Road Crossing in East Acton. The Copp Property abuts the railroad right-of-way and is used as both a residence and a commercial landscaping business. The owner of the property has cleared and wood chipped the right-of-way and is illegally using the right-of-way for storage of debris piles, boats, etc. The Town has repeatedly approached the Owner about his illegal use of the right-of-way and the Owner refuses to suspend his use of the right-of-way.

Figure 9: Copp Encroachment

Dunk & Bubble

Figure 10: Dunk & Bubble Encroachment

Dunk & Bubble is a pool and spa business located on the southern side of Route 27 near Ledge Rock Way in North Acton. Dunk & Bubble's main entrance off of Route 27 is on the western side of the railroad right-of-way. It is the Town's understanding that MassHighway installed the 12-inch diameter drainage pipe located under the railroad right-of-way to allow flow between two small ponds. The business is also using the right-of-way as an access drive for their rear storage buildings and for storage of debris piles of such items as metal appliances and glass window panes. Construction of the bicycle path will eliminate this access.

Rex Lumber

Figure 11: Rex Lumber Encroachment Looking North Along the Right-of-Way

Figure 12: Rex Lumber Encroachment Fencing Across the Right-of-Way

Rex Lumber is a commercial lumber supply company located on the northern side of Route 27 near Ledge Rock Way in North Acton. The main entrance to the Rex Lumber site is located north of the crossing, along Route 27. Rex Lumber also owns an adjacent parcel of land, used for material storage, which is accessible from Rex Lane off of Ledge Rock Way. As shown in Figure 11 and 12, Rex Lumber has cleared the right-of-way, paved, removed, or filled in the railroad tracks, and constructed both parking and two private driveways across the tracks to connect their storage facility to the main lumber yard. The Commonwealth of Massachusetts is currently reviewing the status of the right-of-way through this section of corridor. A full title review of both Rex Lumber's interests and EOTC's interests as successor to the RR may be warranted. In any event, the EOTC and Town will need to approach Rex Lumber as the design and community outreach parts of the project go forward.

FST looked at the design, accessibility, and safety implications of two different schemes through this section of corridor. In the event that access is restored to the right-of-way, the bicycle path would follow the existing Lowell Secondary Track alignment (Alternative 1). The other option would be in the case that circumstances require the bicycle path to divert from the right-of-way (Alternative 2). The alternatives were evaluated in terms of their consistency with the project goal of creating a safe and continuous alternative transportation corridor that can be used and enjoyed by the public.

Alternative 1: From the crossing of Route 27 near Ledge Rock Way, the path would continue northward along the existing track alignment. Following this alignment, the path would travel between Rex Lumber's two parcels, as described above. It is important to recognize that although the two parcels are continuous through use of the right-of-way, neither would be landlocked as of a result of the EOTC regaining control over the right-of-way. Although users would need to travel along Ledge Rock Way to access NARA Park, the majority of the path would be separated from vehicles, increasing its suitability for a variety of user types and skill levels. Further, not deviating from the track alignment will help keep additional costs to a minimum.

Following the existing track alignment could result in two measures. The first measure would be to remove Rex Lumber's access across the right-of-way. Fencing and/or landscaping would be needed as a means of access control. Installation of a fence, if located close to the edge of the path, would seem threatening to users. It would be preferable to install a fence at, or near to, the edge of the right-of-way (33 feet on either side of the bike path centerline). Other screening and access limiting measures could include landscaping. If the bicycle path did not require full use of the right-of-way at this location, the EOTC could request that Rex Lumber enter into a license agreement for the additional length of corridor.

The second measure would be to retain one private crossing across the right-of-way for use by Rex Lumber. The first and most important criterion is the safety of the path user. The preferred treatment at this crossing would be to provide path users with the right of way and require a stop control to Rex Lumber. Machines (i.e backhoes and vehicles) would need to come to a complete stop and therefore speed would not be as much of a concern. Path users would be provided with an uninterrupted traveling experience through this section of corridor. Adequate sight distance and advance warning signage will be critical to ensuring the safety of users.

At one time, the Rail Trail Committee had inquired about the feasibility of installing a bridge or tunnel at this location in an effort to mitigate the path's affect on Rex Lumber's operations. FST feels strongly that the cost to construct either structures to appease a private landowner makes it an infeasible option.

Alternative 2: From the crossing of Route 27 near Ledge Rock Way, users would need to travel along Ledge Rock Way to the NARA Park parking lot. Bike lanes or routes along Ledge Rock Way, as shown in Figure 15, would need to be clearly designated through signage and/or pavement markings. From the parking lot, the path would travel along the perimeter of Rex's site. The Rail Trail Committee has indicated that they would like to reserve use of the stone dust path at NARA Park exclusively for pedestrians. Therefore, the bicycle path would need to be constructed parallel to the stone path to mitigate potential user conflicts. One of the benefits for this alternative would be increased accessibility to NARA Park as the path would connect directly to the parking lot. Also, this route would be more aesthetically pleasing as it would travel near the pond at NARA Park and through a wooded area.

There is currently a chain link fence installed along the perimeter of Rex's property that connects to a gate across the right-of-way. The fence, installed by the Town, mitigated concerns by Rex about the potential for trespassing from the town-owned NARA Park property. Rex Lumber installed the heavy-duty gates across the right-of-way at each end of their site, as shown in Figure 12. The slopes along the western perimeter of the NARA Park property are quite steep whereas Rex's storage area (on the inside of the fence) is relatively flat, and paved in most areas. The preferred option would be to construct the bicycle path along the flat portion of Rex's parcel via a 20-foot easement. The fence would need to be relocated. It is anticipated that Rex Lumber would request a land swap for use of their property in exchange for continued use of the railroad right-of-way.

A land swap would ultimately eradicate the continuity of the right-of-way corridor. Further, this alternative is more circuitous than a route that would follow the existing railroad right-of-

way. The route is less direct and longer, requiring additional length of path and construction of a boardwalk over a wetland area. The need to provide a boardwalk through the wetland area would result in increased costs and permitting requirements as a result of the disturbance. Users relying on the path for transportation purposes will prefer a direct route between destinations. Minor diversions are acceptable, especially if they provide a safer or more attractive experience. However, this alternative is a major diversion from the right-of-way, thus shifting the focus of path away from a viable form of alternative transportation.

Nashoba Sportsman Club

The private access drive to the Nashoba Sportsman's Club crosses the railroad right-of-way at nearly a right angle. The drive is shown as a private crossing on the railroad valuation maps dated June 30, 1915, as amended August 13, 1940. This drive is the only means of access to the club property. Construction of the bicycle path will need to accommodate this access drive.

Figure 13: Nashoba Sportman Club Access Drive

In addition to the more substantial encroachments listed above, there are stacked metal storage trailers, a camper, and other debris situated on the Weatherbee Acton Realty commercial property located on the northern side of the Wetherbee Street crossing. These items are located at the bottom of the slope and are potentially within the eastern edge of the right-of-way. There were also piles of trash, grass clippings, and debris in the section of right-of-way abutting the commercial and multi-family residences on Route 2A/Great Road. Encroachments by abutters will need to be removed during the construction phase of the project.

2.4.5 Abutters

The position of abutters on the proposed bicycle path has only been formally evaluated for abutters located in the East Acton Village area. Of the four major encroachments discussed in Section 2.4.4, three are located in the East Acton area and are primarily used for commercial activities.

In the Summer of 2001, the East Acton Village Planning Committee (EAVPC) conducted a survey of residents/Town Meeting attendees and businesses/property owners within the existing East Acton Village (EAV) zoning district as well as a broader survey area just outside of the current EAV zoning district. The results of the resident/Town Meeting surveys are included in Section 2.1. There were a total of 46 business and property owner surveys

returned as part of the EAV study. One of the survey questions asked each respondent to rate how the rail trail would affect their business/property. Their responses are shown in Table 8.

Table 8: Business/Property Owners Responses

Response	#	%
Very Unfavorably	2	4
Somewhat Unfavorably	0	0
No Effect	19	41
Somewhat Favorably	4	9
Very Favorably	19	41
No Response	2	4

Source: East Acton Village Planning Committee Survey Results

The EAVPC survey was distributed to both business/property owners abutting the proposed rail trail and those located within the study area. Unfortunately, due to the anonymity of the survey results, the responses of abutters cannot be differentiated from the responses of other business/property owners in the East Acton Village area. Still, only four percent of respondents in the entire study area indicated that the rail trail would have an unfavorable affect upon their business/property. A number of the business/property owner survey respondents also included additional comments with regard to the proposed rail trail. Two respondents stated:

> *"My top priority is the pedestrian and bicycle path. It will bring in customers to East Acton with minimal impact to residential properties."*

> *"I believe that the bike path will have the strongest positive effect on both East Acton Village business and the homes nearby of any change you recommend to the East Acton Village."*

As previously stated, the position of abutters north of the East Acton Village area has not yet been determined. The owner of Dunk 'n Bubble and other business/property owners abutting the proposed bicycle path will be contacted by EOTC as the project moves forward.

Privacy of adjacent residences and separation of commercial facilities from the bicycle path will need to be established through the use of specific mitigation measures. The specific measures used will need to be discussed with each property owner during the design phase of the project. In areas where commercial/industrial areas directly abut the right-of-way, fences may be required both as a means to prevent trespassing and as a way to promote safety. Use of wood rail fences and landscaping will be employed as required to help ensure a degree of protection to adjacent land uses.

3 PROJECT CONCEPTUAL DESIGN

3.1 Proposed Bicycle Path Dimensions

The proposed bicycle path to be developed within the Lowell Secondary Track corridor will consist of a bicycle path facility / shared use path with a bituminous concrete surface as shown in Figure 15. A bicycle path facility / shared use path is constructed to the highest standards and is designated for the exclusive use of non-motorized vehicles. All bicycle path construction is to take place within the existing railroad right-of-way and therefore will be physically separated from motorized traffic, except at grade crossings.

The typical cross section of the bicycle path will be governed by the existing railroad right-of-way and rail bed width, location of adjacent environmental resources and the proposed path dimensions and typical cross-sections for the Lowell to Westford portion of the Bruce Freeman Bicycle Path. The facility must be wide enough to accommodate the multiple user types with minimal conflict.

Figure 14: Looking North on Railbed

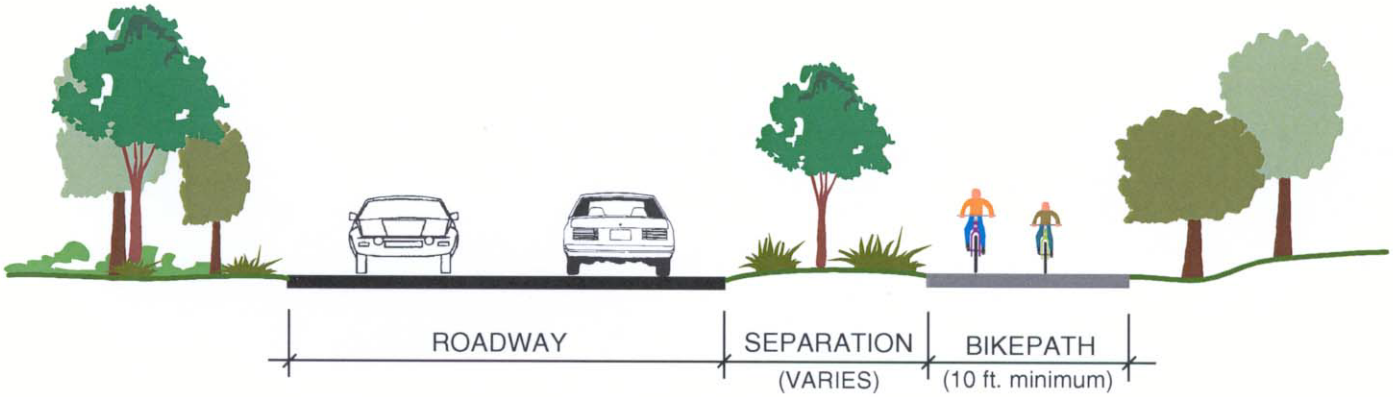
FST reviewed the design plans submitted to MassHighway for the 7-mile Lowell to Westford portion of the Bruce Freeman Bicycle Path. The proposed typical section for this segment of path is a 3.0-meter (10-foot) paved surface with 0.6-meter (2-foot) gravel borrow shoulders. For the majority of the project, the proposed path is located in the center of the railroad right-of-way, which necessitated removal of the existing railroad tracks and ties. Unlike the Acton segment, the Lowell to Westford segment travels through densely developed areas where both sides of the railroad right-of-way abut residential and commercial uses.

According to the Valuation Maps, the existing railroad right-of-way is 66 feet wide for most of its length. The Town and EOTC have indicated their support for removing the tracks and ties along the entire length of the corridor for design, safety, and liability reasons. The EOTC noted, however, that other considerations may impact the final decision with respect to removal of the rail infrastructure. These considerations would be more fully developed in the context of the title review and proposed disposition of the property for the proposed alternative transportation use. Other than a small section of the Shining Sea Bicycle Path in Falmouth, there have not been any other bicycle path projects where the tracks and ties have been left in-place on EOTC managed property. Therefore, pending further research by the EOTC, the bicycle path will follow the centerline of the right-of-way, which follows the existing track alignment.

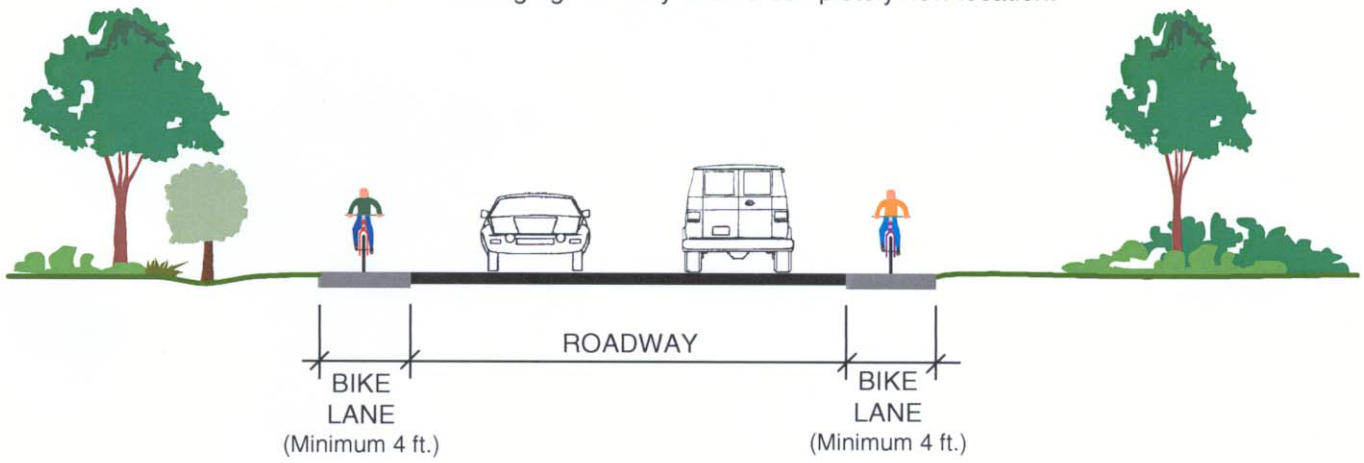
Consequently, removal of the tracks and ties through the section of right-of-way where there used to be two sets of tracks of tracks will permit a bicycle path cross section with a 4-foot shoulder on one side. The 4-foot shoulder will support additional uses including a soft walking surface and equestrian use. The railbed width will permit a widened cross section from the Acton/Concord Town Line to the Route 27 crossing near Ledge Rock Way, to provide equestrians with access to the Nashoba Brook Conservation Area and an on-road connection to the Town Forest. A typical bicycle path cross section with a soft walking trail is shown in Figure 16.

From this point northward, it is recommended that the shoulders be reduced to the 2-foot minimum due to the narrowed railbed width and the desire to minimize impacts on bordering vegetation and adjacent wetlands. The typical cross-sections for the Lowell to Westford portion of the Bruce Freeman Bicycle Path does not include widened shoulders for equestrian use. A typical bicycle path cross section through this section of corridor is shown in Figure 17.

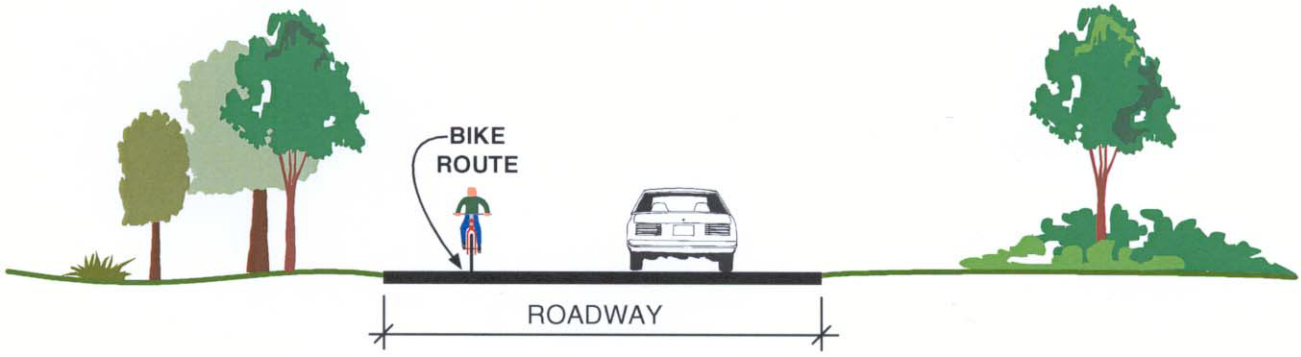
Through all sections, a minimum 3-foot offset will be required from the traveled surface to any obstruction (i.e. trees, wood rail fence, etc.) to meet current bicycle path design standards. Depending upon the height of the embankment and condition at the bottom of the slope, a wood rail fence may be needed to prevent users from traversing the sideslopes. Vertical clearance to obstructions will need to allow for the passage of maintenance and emergency vehicles.



Bikepaths
A path for the exclusive use of bicyclists, physically separated from motorized vehicular traffic either within an existing right-of-way or on a completely new location.



Bike Lanes
A portion of a roadway which has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists.



Bike Routes
A shared right-of-way identified only by signing. Bike routes are proposed along low speed, low volume roadways where there is insufficient width to provide bicycle lanes.

Figure 15: Bicycle Facility Classifications

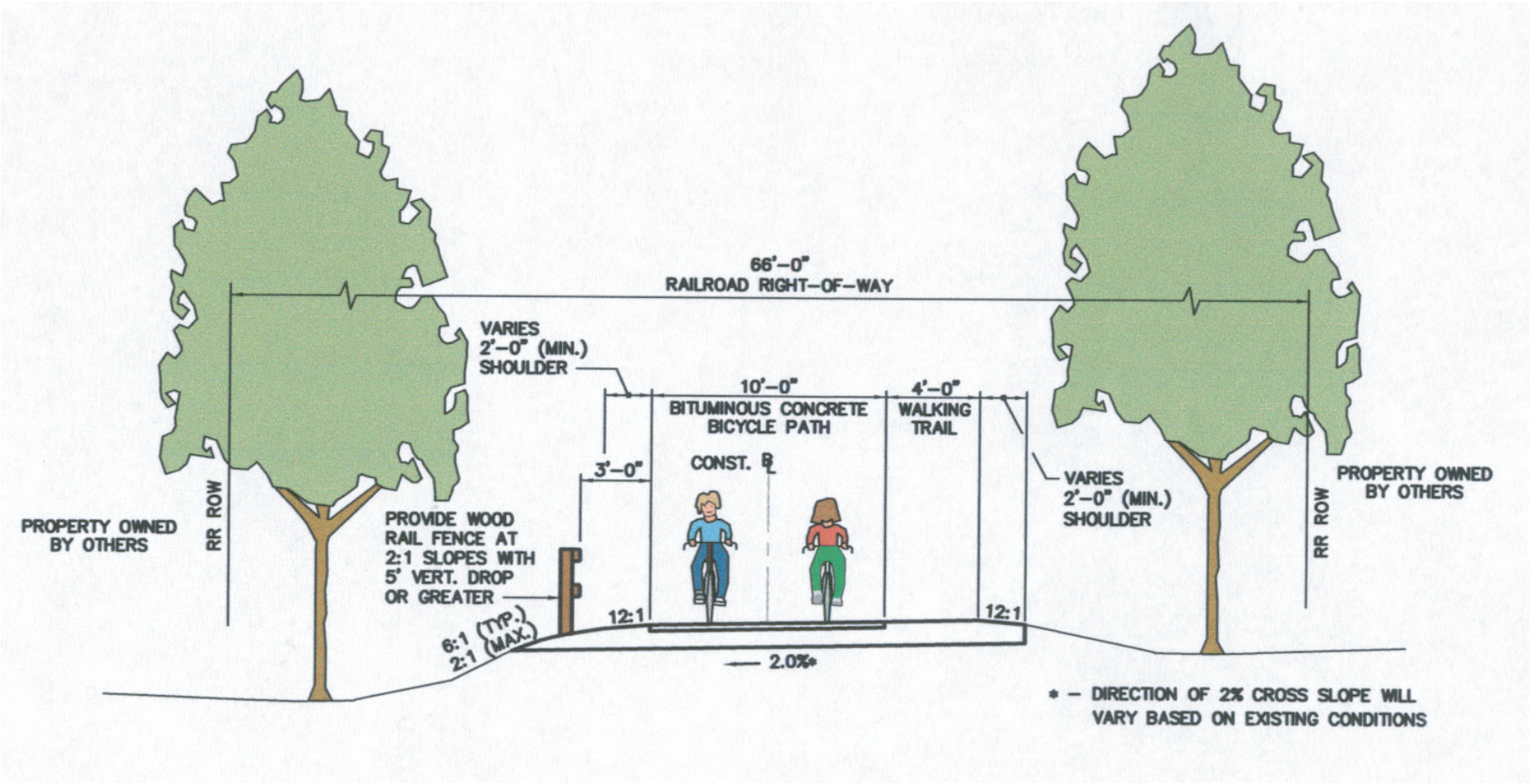


Figure 16: Typical Bicycle Path Cross Section with Walking Trail
(Acton/Concord Town Line to Route 27 Crossing Near Ledge Rock Way)

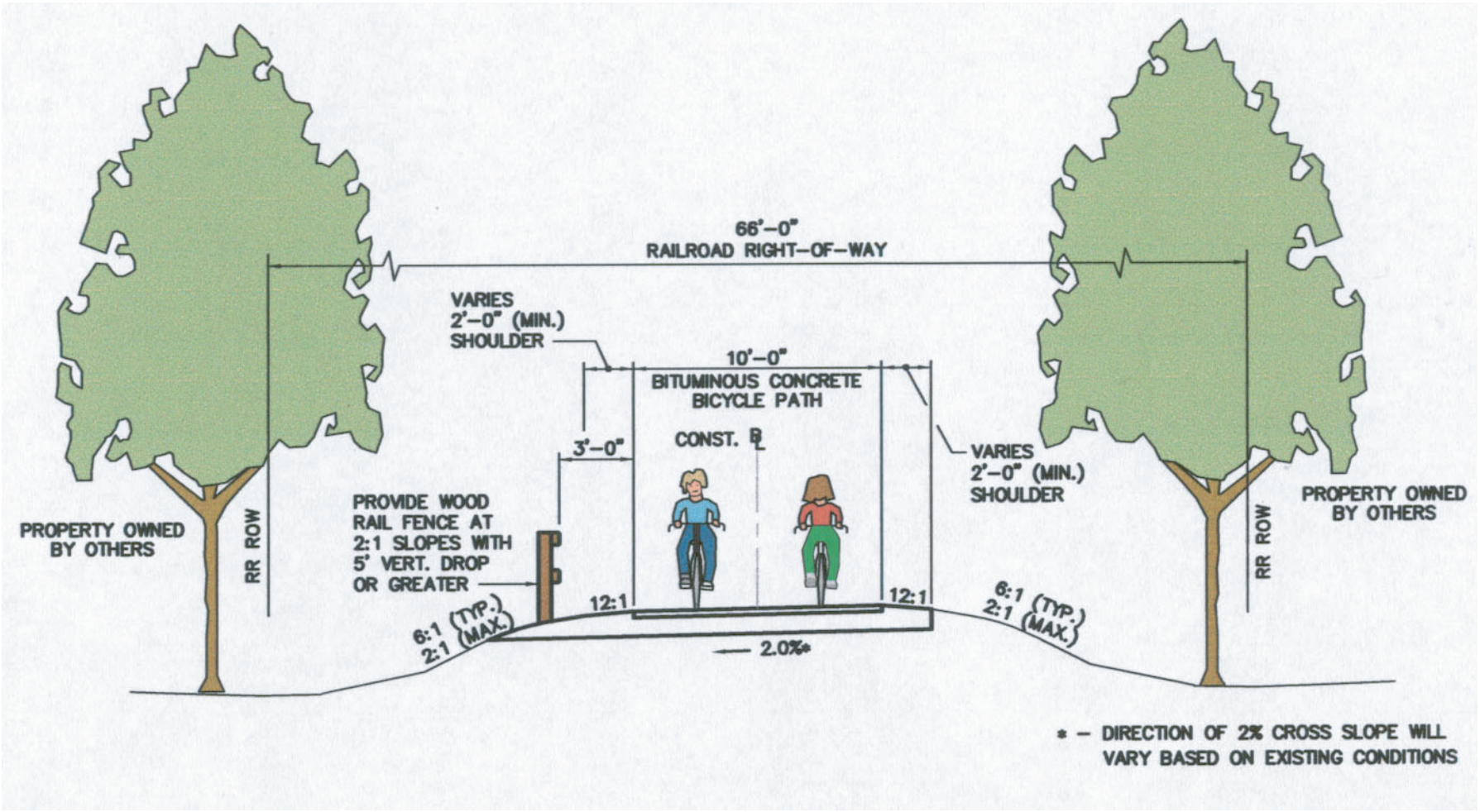


Figure 17: Typical Bicycle Path Cross Section
(Route 27 Crossing Near Ledge Rock Way to Carlisle Town Line)

3.1.1 Surface Materials

Another important consideration in trail design is the type of surface that will be provided. FST and the Rail Trail Committee considered alternative surface materials, other than bituminous concrete, during the preparation of this study. The selection of a surface material depends on the anticipated type and intensity of path use, terrain, climate, design life, maintenance, cost, and availability. If federal funds are used for construction, the path surface must meet Americans with Disabilities Act Accessibility Guidelines (ADAAG) which require that the surface material be "stable, firm and slip-resistant." The following is a brief description of some of the available surface materials used in bicycle path construction:

Bituminous Concrete: FST recommends use of a bituminous concrete surface for funding and maintenance reasons. MassHighway typically only funds rail trails with a bituminous concrete surface (i.e. hot mix asphalt). It is FST's understanding that MassHighway has recently decided to conduct a pilot project to assess other types of rail trail surface materials. However, to-date, FST has not seen MassHighway fund any rail trails other than those with bituminous concrete surfaces. From a maintenance and construction perspective, bituminous concrete is a durable material that permits ease of placement and compaction. A bituminous concrete surface has a much longer lifetime than other materials, such as stone dust. The Cape Cod Rail Trail is just now being resurfaced after 20 years of use.

Stone Dust: Crushed stone surfaces are highly dependent upon underlying soil suitability and drainage patterns as they are highly susceptible to rutting and washouts, even with a geosynthetic liner. Based on the Town's experience at NARA Park, the level of maintenance required for the crushed stone walking path has led the Rail Trail Committee to recommend a smooth, regular surface material for the bicycle path. Use of stone dust also limits the types of user activities.

Flexible Pavers: There are other flexible paver surfaces available, but those are substantially more costly than bituminous concrete and are difficult to work and the method of application is more difficult. If constructed properly, these flexible pavers or "soil stabilizer" can be ADA compliant.

Bicycle paths are increasing in popularity as an alternative form of transportation and also as facilities suitable for all user levels. The majority of these users prefer the benefits of smooth, hard surfaces. On the other hand, soft surface materials are low cost, but require substantial maintenance and are more suitable to mountain bikes than road bikes, prohibit use by rollerbladers, and may cause some difficulty for the physically-challenged. The soft surface is often preferred by runners and walkers.

It was determined that a paved bituminous concrete surface was preferable for durability, user friendliness, and ease of maintenance. At certain locations, such as at the Concord Road crossing near East Acton Village Green, the Town may want to consider "stamping" the bituminous concrete with a brick pattern for aesthetics.

3.2 Number and Adequacy of At-Grade Crossings

A major safety issue associated with the design of any bicycle path is the handling of roadway intersections/. objective at these locations is to provide ample warning for both motorists and bicycle path users alike on the approaches and a clearly defined crossing with reasonable sight distance. The segment of bicycle path under study includes six-grade road crossings with special attention given to the Route 2A crossing due to the high traffic volumes. The segment of bicycle path located in Acton does not include any grade-separated crossings. Pending review by the EOTC, there will also be a private driveway crossing at the Nashoba Sportman Club.

3.2.1 Accident Data [26]

A review of vehicular accident data involving pedestrians and bicyclists in the Town of Acton was conducted for the years 1999 through 2001. The accident data was obtained from MassHighway, which processes the data from reports filed with the Massachusetts Registry of Motor Vehicles. The data obtained is limited in terms of its completeness. For many of the accidents there is incomplete information and there is a known underreporting of vehicle-bicycle crashes. There are also injuries related to falls or other non-collisions that do not involve a motor vehicle.

Between the years 1999 and 2001, there were a total of 16 reported motor vehicle accidents involving bicyclists within Acton. Of the reported 16 accidents involving bicyclists, only two of the accidents were in proximity to the study area. The first accident occurred at 176 Great Road in December 1999. This accident took place around 5PM (road lit) under wet weather and road conditions. The second accident occurred at the intersection of Davis Road and Great Road in July 2000. This accident took place around 5PM under clear weather and dry roadway conditions. Neither of these accidents resulted in any fatalities.

There were a total of 23 reported motor vehicle accidents involving pedestrians within the same timeframe. Of the reported 23 accidents involving pedestrians, only three of the accidents were in proximity to the study area. In 2000, two accidents involving a pedestrian occurred at locations along Great Road. The first accident was a fatal crash involving a pedestrian that occurred at 255 Great Road in November 2000. This fatal accident took place around 5PM (road lit) under clear weather and dry roadway conditions. The other accident in 2000 occurred along Great Road, though no specific location was noted. This accident occurred around 8PM (road lit) in February 2000 under clear weather conditions. In 2001, there was one pedestrian accident reported. The accident occurred in March at 341 Great Road, under clear weather and dry roadway conditions.

3.2.2 Crossing Improvements

Another design issue is the treatment of the proposed bicycle path where it crosses streets at-grade. The creation of midblock crossings presents operational and safety issues for both vehicles and bicycle path users. Items such as sight distance, grading, etc. will all have to be examined in more detail before specific designs for the necessary level of protection at these crossings can be developed.

Since bicycle path construction will be limited to within the railroad right-of-way, it may not be possible to align the path to meet the roadway at a 90-degree angle. In these cases, the path will be skewed at an angle as close to 90 degrees as can be obtained while maintaining minimal disturbance to the existing rail bed and surrounding areas, especially when bordering wetlands or private property would be affected.

Figure 18: Typical Bicycle Path Crossing

It is recommended that a horizontal alignment featuring reverse curves approaching the roadway intersection be developed at each crossing as shown in Figure 18 and 19. This alignment would shift the path easterly within the corridor just south of the crossing and to the westerly portion of the right of way immediately north of the roadway. Aligning the path in this manner will shorten the roadway crossing by creating more of a 90-degree intersection and improve sight lines for bicycle path users. Introduction of horizontal curves will also provide an additional visual cue for bicycle path users of the approaching intersection. To avoid user conflicts at intersections and to prevent access by motor vehicles, the path can be separated into two narrower paths with a removable bollard or gates located in the middle for emergency access, as shown Figure 18. Traffic calming techniques, proper warning and regulatory signage, and pavement markings will be utilized to improve safety conditions for both path users and drivers as outlined in the Manual on Uniform Traffic Control Devices (MUTCD).

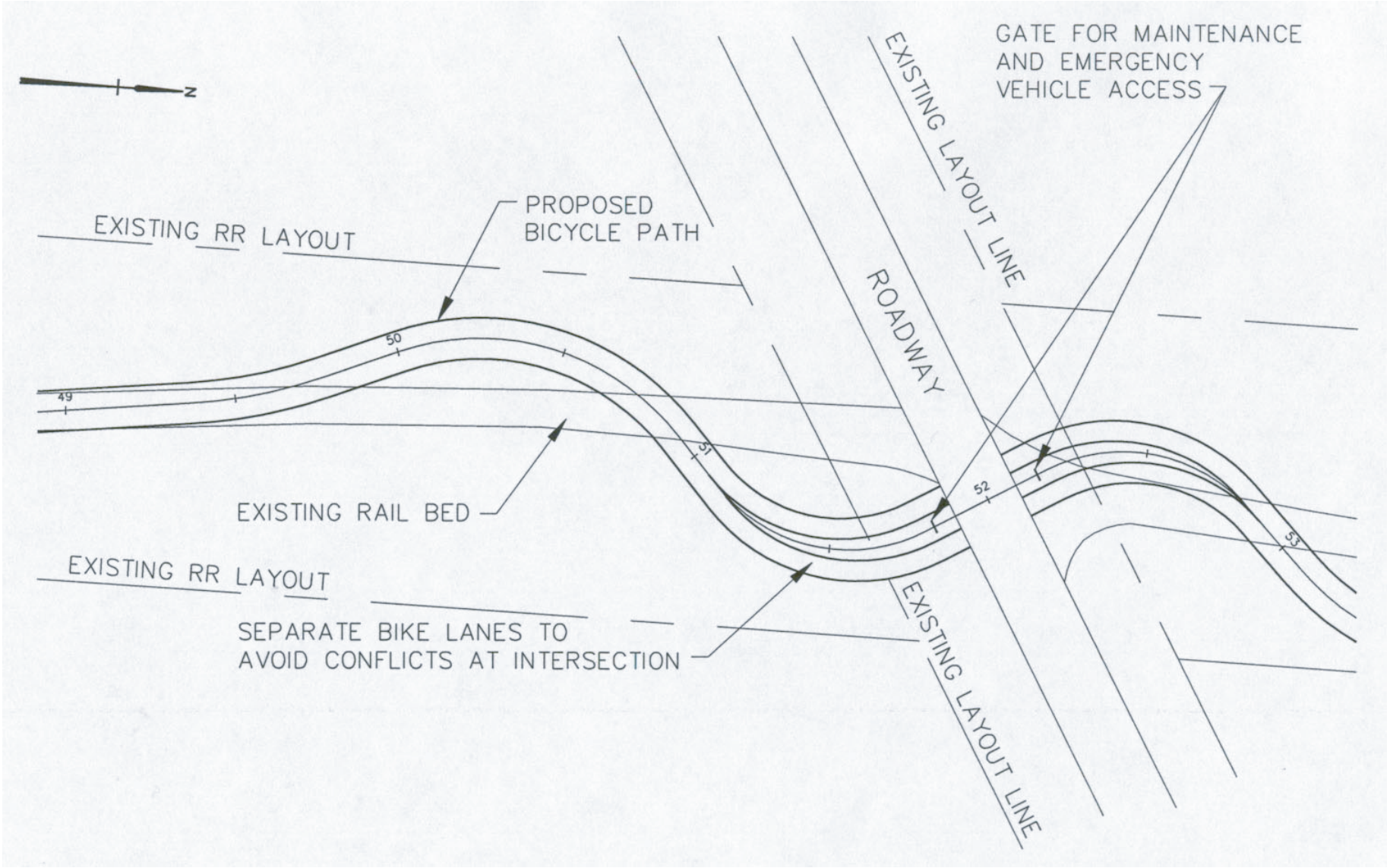


Figure 19: Bicycle Path / Roadway Intersection

The following paragraphs discuss each crossing in more detail and describe the type of crossing improvements that may be needed at each specific intersection. There is also a discussion on traffic volumes in the vicinity of each crossing. Traffic data presented in this section is based upon existing data sources such as MassHighway traffic data, the East Acton Village Transportation Planning Study, Brookside Village Shops Traffic Impact Study, and other Town reports. The traffic data presented in each source was inconsistent both in terms of the amount of data available and the years used for existing and future conditions, for example. Therefore, the data presented in this section is intended for order of magnitude and comparison purposes. It is recommended that new traffic counts be taken at each bicycle path / roadway intersection during the preliminary design stages of the project.

Route 2

Figure 20: Looking South Towards Route 2

The railroad right-of-way crosses Route 2 in the Town of Concord, approximately 100 feet south of the Acton Town Line. Route 2 is a high speed and volume, separated four-lane primary roadway. On the approach to Route 2, the railroad right-of-way in Acton is bordered on both sides by land owned by the Commonwealth of Massachusetts. The existing railroad crossing occurs at a low point in the vertical curve along Route 2. After crossing Route 2, the railroad right-of-way travels over Nashoba Brook approximately 350 feet to the south.

In April 2003, the Environmental Notification Form (ENF) was filed with the Massachusetts Executive Office of Environmental Affairs (EOEA) for the Route 2 Reconstruction at the Concord Rotary. The ENF certificate specifically states that the Environmental Impact Report (EIR) "should discuss how the proposed grade-separated interchange project will incorporate the eventual extension of the proposed Bruce N. Freeman Memorial Bicycle Path and allow the path to safely across Route 2 and Commonwealth Avenue within or in close proximity to the existing abandoned Framingham & Lowell right-of-way."[27]

Developing a preferred alternative for this crossing will require a joint effort by the towns of Acton and Concord, the consultant selected to prepare the EIR, the EOTC, and other state agencies and departments with jurisdiction over the project area. The involved parties will need to determine how to incorporate the bicycle path into the overall Route 2 improvement project in Acton and Concord. The study will need to evaluate alternative alignments including those that limit construction to within the existing railroad right-of-way and others that will necessitate easements, or other rights, from the Commonwealth of Massachusetts or other adjacent property owners.

The feasibility of incorporating an at-grade or grade-separated bicycle path crossing into the design plans for Route 2 will need to be further studied. The route proximity to Nashoba Brook and other environmental resources will be an important factor in analyzing alternative alignments.

Wetherbee Street

Figure 21: Wetherbee Street Looking West

Figure 22: Wetherbee Street Looking East

The railroad right-of-way crosses Wetherbee Street approximately 450 feet west of Great Road (Route 2A/119). Wetherbee Street is a low volume, narrow two-lane roadway connecting Great Road (Route 2A/119) to Route 2 westbound. The posted speed limit in the vicinity of the crossing is 25 miles per hour. Sight lines traveling north on the right-of-way are restricted by a horizontal curve to the west.

The East Acton Village Transportation Study presented the weekday morning, evening and Saturday peak hour traffic volumes along Wetherbee Street shown in Table 9.

Table 9: Wetherbee Street Traffic Volumes

Weekday Morning Peak Hour Volume	70
Weekday Evening Peak Hour Volume	80
Saturday Midday Peak Hour Volume	80

Source: East Acton Village Transportation Study, 2002
Brookside Village Shops Traffic Impact Study, 2000

Low speeds and traffic volumes were observed on this roadway segment, improving its suitability for accommodating bicycle and pedestrian use of the shared use path.

Concord Road

The Concord Road crossing is located in a very high visibility area at the intersection of Concord Road and Great Road (Route 2A/119) as shown in Figures 23 and 24.

Figure 23: Concord Road Looking West

Figure 24: Concord Road Looking East

Concord Road is a two-lane road with no shoulders. There is a sidewalk on the northern side of Concord Road. Concord Road is a collector roadway that connects the heavily populated areas of Acton Center and East Acton Village. The posted speed limit in the vicinity of the crossing is 25 miles per hour. The railroad right-of-way crosses Concord Road approximately 150 feet west of Great Road (Route 2A/119) at an acute angle of approximately 50 degrees. Sight lines travelling north are obstructed by brush and a utility pole to the west. Sight lines from the south are partially obscured by the roadway grade to the west, but are still good.

The East Acton Village Transportation Study and Brookside Village Shops Traffic Impact Study presented weekday morning, evening and Saturday peak hour traffic volumes along Concord Road, as shown in Table 10.

Table 10: Concord Road Traffic Volumes

Weekday Morning Peak Hour Volume	440
Weekday Evening Peak Hour Volume	560
Saturday Midday Peak Hour Volume	610

Source: Brookside Village Shops Traffic Impact Study, 2000
East Acton Village Transportation Study, 2002

The Town owns two parcels of land at this location; a 0.62 acre parcel of the western edge of the right-of-way alongside Ice House Pond and a 0.68 acre parcel on the eastern side of the railroad right-of-way alongside Route 2A/Great Road. In collaboration with the planning efforts for East Acton Village and the recognized need to provide an attractive focal point for the bicycle path, the Town received downtown technical assistance in the form of services through the Department of Housing and Community Development's Massachusetts Downtown Initiative (MDI) Program. The State assigned the Cecil Group of Boston to provide technical assistance to the Town in the form of landscape design services for these two parcels, referred to as East Acton Village Green (formerly known as Ellsworth Junction).

The East Acton Village Green Schematic Plan, included as Appendix B, does not show FST's recommended horizontal alignment, which features reverse curves on the approach to the Concord Road crossing. The reverse curves are intended to improve user safety at the crossing. The sketch shown in Appendix B was completed by the Cecil Group prior to completion of the feasibility study. FST believes that the recommended alignment would not preclude incorporation of the landscaping and interpretive features proposed at East Acton Village Green. However, all proposed work within the 66-foot right-of-way will need to be approved by the EOTC prior to construction.

Providing directional signage and safety features for bicycle path users and drivers are key issues at this location due to the high traffic volumes and proximity of the path to the Great Road (Route 2A/119) transportation corridor.

Brook Street

Figure 25: Brook Street Looking West

Figure 26: Brook Street Looking East

The railroad right-of-way crosses Brook Street at an acute angle of approximately 70 degrees. Brook Street is a two-lane roadway with no shoulders as shown in Figures 25 and 26. Vehicles use Brook Street as a cut through between Route 27/Main Street and Route 2A/Great Road.

The Brookside Village Shops Traffic Impact Study presented the weekday evening and Saturday peak hour traffic volumes at the Brook Street/ Great Road (Route 2A/119) intersection, as shown in Table 11.

Table 11: Brook Street Traffic Volumes

Weekday Evening Peak Hour Volume	270
Saturday Midday Peak Hour Volume	300

Source: Brookside Village Shops Traffic Impact Study, 2000

There is no posted speed limit in the vicinity of the crossing. Sight lines traveling north along the right-of-way are obscured by a horizontal curve to the west and brush to the east. Sight lines from the south are obscured by brush and a stand of trees to the east.

Great Road (Route 2A/119)

The railroad right-of-way crosses Great Road (Route 2A/119) at an acute angle of approximately 40 degrees. Great Road (Route 2A/119), shown in Figures 27 and 28, is a two-lane state highway with shoulders. The posted speed limit along this segment of roadway is 40 miles per hour. The midblock crossing occurs at a point approximately 1,000 feet east of the signalized Route 2A/Route 27 intersection.

The bicycle path crossing is located at the low point of the vertical curve as vehicles heading west and east on Great Road (Route 2A/119) both travel down a small hill to the crossing. Sight lines traveling north and south on the right-of-way are obscured by treelines. Design issues noted at this proposed crossing consist of restricted sight lines and the speed and volume of traffic on Route 2A.

Figure 27: Great Road (Route 2A/119) Looking West

Figure 28: Great Road (Route 2A/119) Looking East

The Brookside Village Shops Traffic Impact Study and East Acton Village Transportation Study presented the average daily traffic volume and weekday evening and Saturday peak hour traffic volumes along Great Road (Route 2A/119), shown in Table 12.

Table 12: Great Road (Route 2A/119) Traffic Volumes

Average Daily Traffic Volume	21,500
Weekday Evening Peak Hour Volume	1,800
Saturday Midday Peak Hour Volume	1,600

Source: Brookside Village Shops Traffic Impact Study, 2000
East Acton Village Transportation Study, 2002

High volumes and speeds of vehicles along this stretch of roadway will present a challenge for bicycle path users. Based on recent conversations with MassHighway

District 3, FST recommends that the Town first apply for a crosswalk permit from MassHighway and then revisit the need to install a signal at this location once the bicycle path has been constructed.

MassHighway District 3 has recently rejected several crossing permits proposed along Route 2A. In doing so, MassHighway has "raised the bar" in terms of the conditions that need to exist in order for future crossings to be approved. However, there are a number of factors that will help create a strong case for a crosswalk at this particular location. First, the next pedestrian crosswalk is located 1,000 feet west of the crossing at the Route 2A/27 signalized intersection, which exceeds the 300-foot criteria that MassHighway typically looks for. Users travelling south on the bicycle path would have to travel westward in the roadway shoulder to reach this intersection. Users travelling north on the bicycle path could not cross at the Route 2A/27 intersection because they would be required to travel counterflow to vehicles travelling along Great Road (Route 2A/119). Second, there are currently no sidewalks constructed on either side of Route 2A near the crossing, thereby requiring users to travel in the roadway shoulders. Third, a review of vehicular accident data for the Town of Acton between 1998 and 2000 revealed that there have been a total of four motor vehicle accidents involving a pedestrian or bicyclist, all of which occurred at points along Great Road (Route 2A/119). In addition to crosswalk striping, the Town should also seek approval from MassHighway to install signs and pavement markings along Great Road (Route 2A/119) in advance and at the intersection to alert motorists of the bicycle path crossing. It is suggested that an overhead flashing beacon be installed to supplement the signs and markings and provide additional warning of the approaching intersection to both motor vehicle and bicycle traffic.

MassHighway indicated that they would clearly review an application to install a signal at this location once a traffic signal warrant analysis was conducted and one or more of the warrants satisfied. In order to compile the traffic data necessary to perform the warrant analysis, traffic and path use counts will need to be taken after the bicycle path is constructed. The justification for a traffic signal will be based on the volumes processed by the intersection and the number of gaps available in the traffic stream that will allow users to safety cross the roadway. In the event it is determined that a sufficient number of gaps in vehicle traffic will not be available for path users to cross Great Road (Route 2A/119), it is recommended that consideration be given to installing a push button actuated traffic signal at this crossing location.

Route 27

The railroad right-of-way crosses Route 27 twice in North Acton. Route 27 is a two-lane road with a posted speed limit of 35 miles per hour.

The first crossing is located near Ledge Rock Way, as shown in Figures 29 and 30. This location provides an on-road connection along Ledge Rock Way to the amenities at NARA Park. There is a sidewalk along the southern side of Route 27. Sight lines traveling north on the right-of-way at this location are obscured by the presence of horizontal curves to the west and east of the crossing. Vehicles exiting left from Ledge Rock Way to travel north on Route 27 cross the railroad right-of-way.

Figure 29: Route 27 at Ledge Rock Way - Looking South

Figure 30: Route 27 at Ledge Rock Way - Looking North

The second crossing of Route 27 is located further north near the Marshall Well-Acton Water District Pump Station. The railroad right-of-way crosses Route 27 at an acute angle of approximately 35 degrees. Sight lines travelling north are obscured by the roadway grade to the west. Sight lines from the south are very limited to the east due to a curve in the roadway alignment and adjacent earth berm. Sight lines to the west are obscured by the roadway grade, but are still good as shown in Figure 31 and 32.

Figure 31: Route 27 Looking South

Figure 32: Route 27 Looking North

At this location, it is recommended that the crossing be provided at a 90 degree angle just south of the existing track alignment. Crossing at this location will improve sight distance for path users and approaching vehicles as well as reduce truck/path user conflicts at the Kennedy driveway. The proposed alignment will require that the bicycle path be constructed on a small portion of Acton Water District Land. On the west side of Route 27, the bicycle path would be constructed across the corner of the Kennedy Well Pump Station land. After crossing Route 27, the bicycle path would run either alongside or through the Marshall Well Pump Station land to reconnect to the railroad right-of-way near the existing crossing. This option will likely result in removal of the earth berm and be in close proximity to the wetlands, both on the east side of Route 27. During the design phase of the project, the Acton Water District will need to be contacted for their approval and may require a vote of the Water District members (the registered voters of Acton) at their Annual Meeting.

The average daily traffic volume for the portion of Route 27 north of Great Road/Route 2A intersection was obtained from MassHighway traffic counts. A traffic impact assessment was prepared for The Inn at Robbins Brook by Transportation Planning Services in 1998. The Inn at Robbins Brook is a retirement community located adjacent to Route 27, less than one mile north of the Route 27 bicycle path crossing. The construction of the retirement community development is nearly complete to date. The assessment presented the weekday morning and evening peak hour traffic volumes along Route 27/Main Street in the vicinity of the retirement community. The existing (1998) traffic volumes were then adjusted for the design year (2000) to estimate the future-build peak hour traffic volumes. It can be assumed that traffic volumes along this stretch of Route 27 would be similar for both crossings.

Table 13: Route 27 Traffic Volumes

Average Daily Traffic Volume	10,200
Weekday Morning Peak Hour Volume	1,020
Weekday Evening Peak Hour Volume	1,120

Source: MassHighway Traffic Data[28]
Retirement Community Traffic Impact Assessment[29]

Nashoba Sportman Club

The private access drive to the Nashoba Sportsman Club crosses the railroad right-of-way at nearly a right angle. The drive is shown as a private crossing on the railroad valuation maps dated June 30, 1915, as amended August 13, 1940. This drive is the only means of access to the club property. It is recommended that stop control be provided for vehicles entering and exiting the club and path users be provided with the right of way.

Successful completion of the Acton portion of the Bruce Freeman Bicycle Path will depend to some extent on the ability to provide safe roadway crossings along the project corridor. The solutions at the studied intersections consist of incorporating appropriate design treatments into the project plans. Improvements considered in this study and resulting recommendations are based on field observations of roadway/intersection geometrics and traffic operations,

experience with design issues on similar bicycle/pedestrian facilities, familiarity with traffic conditions in Acton and discussions with local officials. This approach allows for a preliminary assessment of crossing improvements but does not preclude the need for more detailed study during the design phase.

3.3 Bridges

A bridge along any bicycle path should be a unique event as well as a focal point that can change the entire character of the path. In order to keep with the theme of preserving the history of the railroad corridor, FST evaluated the feasibility of using the existing abutments at the five crossings of Nashoba Brook and one crossing of Butter Brook.

As previously noted, the NA&B track was removed in the late 1920's and the remaining Lowell Secondary Track was not relocated on the segment of right-of-way between West Concord and the first crossing of Route 27 in North Acton. The granite abutments were constructed to support the Lowell Secondary Track and former NA&B track and therefore extend a greater width of the right-of-way. The granite abutments at the crossing of Nashoba Brook and Butter Brook in North Acton are much smaller both in terms of swath and span. A visual inspection of the six railroad brook crossings indicated that the wood and steel bed and granite abutments are still intact.

The six existing bridges shown in Figures 33 through 38 are of similar construction, with spans of 30 feet for Bridge Nos. 13.23 and 11.16, 32 feet for Bridge Nos. 12.27 and 12.04, 26 feet for Bridge No. 9.83, and 18 feet for Bridge No. 9.65. The structures all consist of a timber deck made up of 9" x 9" timber railroad ties placed transversely across two steel stringers. The steel stringers rest on stone abutments which are composed of large granite cut stone and appear to be in good condition.

Figure 33: Bridge No. 13.23

Figure 34: Bridge No. 12.27

Figure 35: Bridge No. 12.04

Figure 36: Bridge No. 11.16

Figure 37: Bridge No. 9.83

Figure 38: Bridge No. 9.65

The proposed structures should be designed for an HS10 truck load to meed MassHighway requirements. This will allow for continuous access along the path for maintenance and emergency vehicles. This loading is much less than the original railroad loading and should permit reuse of the existing stone abutments.

Many elements affect the design of the replacement bridges. Aesthetics may influence the choice of materials and the type of structure. Costs are important not only from the standpoint of construction, but also from the standpoint of annual maintenance and repair, and the expected life of the structure before replacement is required. Not all of these components will necessarily be the most desirable for any given type of structure. Thus, two bridge type options should be studied, 1) reuse of the existing structure and 2) use of a pre-engineered structure.

The EOTC has indicated that they do not have a preference whether the Town chooses to rehabilitate the existing bridge superstructures or install a pre-engineered bridge, as long as the end product is a safe structure.[30]

Keeping in mind the environmental constraints and the desire to reuse components of the structures, a wood structure configuration as shown in Figure 40 should be used if the existing steel stringers are reused. The deck would be timber plank, although prestressed concrete deck beams for a deck could be used.

Figure 39: Prefabricated Bridge

If the existing structure is not reusable, a pre-engineered structure, such as the bridge shown in Figure 39 could be used. There are many attractive pre-engineered structures available today that would save on construction costs and environmental impacts. Almost all new bicycle/pedestrian bridges today are pre-engineered.

Table 14 shows the approximate construction costs of the two bridge types discussed.

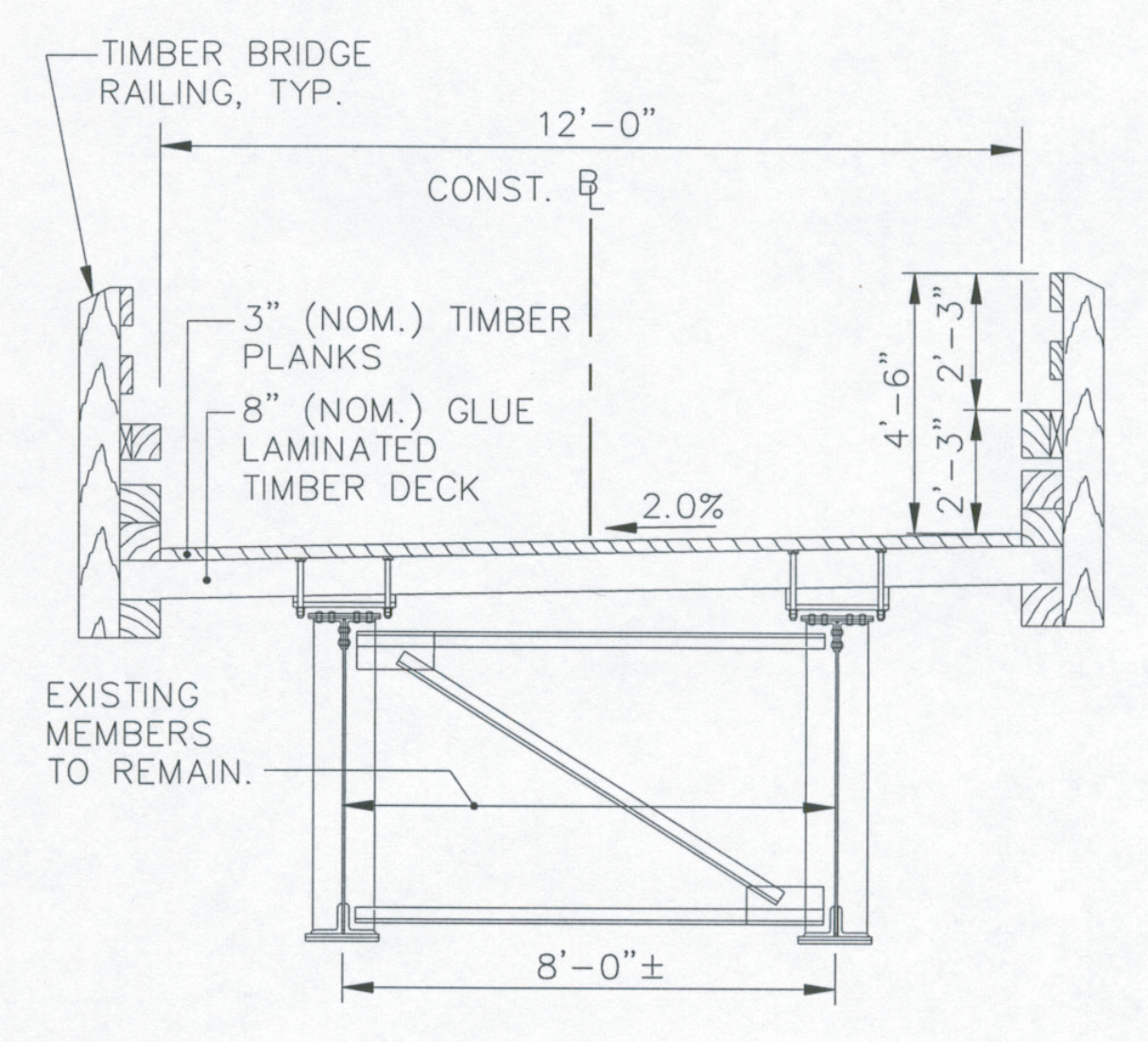


Figure 40: Typical Bridge Deck Section

Table 14: Estimated Bridge Construction Costs

		Option 1 Rehab. Existing Structure			Option 2 Pre-engineered Structure		
Bridge No.	Span (ft)	Bridge Deck	Lead Paint Removal **	Total	Bridge	Exist. Bridge Demolition	Total
13.23	30	$27,000	$40,000	$67,000	$36,000	$15,000	$51,000
12.27	32	$29,000	$40,000	$69,000	$38,000	$15,000	$53,000
12.04	32	$29,000	$40,000	$69,000	$38,000	$15,000	$53,000
11.16	30	$27,000	$40,000	$67,000	$36,000	$15,000	$51,000
9.83	18	$16,000	$40,000	$56,000	$24,000	$15,000	$39,000
9.65	26	$24,000	$40,000	$64,000	$32,000	$15,000	$47,000
			Subtotal	$392,000			$294,000
Abutment Rehabilitation - Same for Each Option ($10,000 per Bridge)				$60,000			$60,000
			Total	$452,000			$354,000
			SAY	$475,000			$375,000

** Testing for lead paint on the steel stringers was not done. However, given the year of construction of the railroad (1870's), it may be assumed that the steel was originally coated with lead based paint.

Encapsulation is necessary to prevent lead emissions into the environment, as lead is a known air, soil, and water pollutant. Encapsulation methods must be employed to contain and recover paint and debris generated during cleaning and deleading operations. The containment and disposal of lead contaminated material is expensive and requires strict compliance with worker and environmental protection regulations. Improper lead containment and disposal has resulted in large fines by regulatory agencies. Based on recent cost estimates from other projects, the cost of lead paint removal was estimated to be $40,000 for each bridge. This cost includes full compensation for all labor, equipment, containment and disposal of cleaning residue, removal and disposal of debris, progress reporting, and all other incidental work thereto.

It should be noted that testing for lead paint on the steel stringers was not completed as part of this study. It is possible that the paint may have worn away from the steel over time, thus reducing the work effort required for lead paint removal and making encapsulation a more viable option from a cost perspective. However, lead testing will need to be completed during the design stages of the project to verify the extent of lead paint on each bridge and more accurately quantify the scope of deleading operations.

Based on the above information, it is recommended that a pre-engineered bridge structure be used for this project. It is also recommended that all existing structures be removed for safety reasons and to avoid costly removal sometime in the future when the complete structure deteriorates.

3.4 Possible Facility Access Points

The Acton portion of the Bruce Freeman Bicycle Path will provide outstanding opportunities to area residents and will typically serve a variety of functions. On one hand, it will serve in a transportation role, offering improved access to in-town destination points. The bicycle path will also be able to potentially serve, for example, such trip generators as the growing retail areas of East Acton village district and the plazas located along Great Road. On the other hand, it will meet recreational needs whether for bicyclists, walkers, joggers, rollerbladers, etc. The bicycle path will provide opportunities to open up portions of the Nashoba Brook riverine ecosystem and historical sites located along the rail corridor for public enjoyment. The project will also provide a link between many of Acton's key recreational areas.

The term shared use path highlights the fact that bicycle paths are used by pedestrians, joggers, people in wheelchairs, in-line skaters, and others not on bicycles. The multi-use nature of these paths greatly influence design and operational issues. It is also anticipated that the bicycle path will be for recreational winter uses such as cross-country skiing and snowshoeing. Design of access points to nearby locations will need to take into account the shared use and multi-seasonal nature of the path.

To optimize the connectivity of the bicycle path, access to some in-town destinations will need to be composed of different classifications bicycle facilities, as shown in Figure 15, which utilize portions of existing roadways for bicycle lanes or routes depending on the width of the connecting roadway. In other locations, creative access solutions may be warranted due to safety concerns and the desire to minimize impacts on natural resources. Access to adjacent neighborhoods, business areas, and recreational facilities will help ensure the success of the project. The proposed bicycle path has the potential to provide access to the following public places of interest in Acton:

Wetherbee Conservation Land

Figure 41: Wetherbee Conservation Land

The Weatherbee Conservation Land in East Acton totals just over 72 acres of agricultural land. This conservation land was purchased from the state in 1982. All of the fields are zoned conservation. Access and parking for this property is provided off of Wetherbee Street, near Route 2. Using the bicycle path crossing at Wetherbee Street, path users could travel west along Wetherbee Street to reach this property. The eastern section of the Wetherbee Land is leased to the state to grow rotating silage crops for the dairy herd maintained by the Department of Corrections farm. Although there is no improved trail systems at present, the wooded area on the western side of the property is suitable for walking, horseback riding, snow shoeing, cross-country skiing, and tracking/birding. After harvest, the fields are also used for a variety of recreational

and youth activities including Boy Scout meets, dog obedience training, rocketry contests, kite-flying, and sky-watching/photography.[31]

East Acton Village District

Figure 42: East Acton Village Green

The railroad crossings at Wetherbee Street and Concord Road are located within the East Acton Village District. Currently, East Acton is a highway-oriented commercial area due to its location along the Great Road/Route 2A corridor. The East Acton area is characterized by a mix of retail and service establishments that cater to vehicle oriented travel.

There is currently a town appointed committee studying existing conditions in the East Acton area. The East Acton Village Planning Committee is chartered with the task of recommending policy changes and infrastructure and facility improvements that will foster a village environment and sense of community within East Acton. One of the goals and objectives of the planning effort is to improve pedestrian and bicycle access and safety in the village area. Improvements to East Acton Village Green, the two small pieces of Town-owned land at the intersection of Concord Road and Great Road, in the form of landscaping and amenities could further enhance the appeal of the East Acton area and bicycle path crossing at Concord Road. A schematic plan of the proposed improvements at East Acton Village Green is included in Appendix B. It should be noted that the schematic plan preceded the feasibility study and is therefore inconsistent with the recommended bike path alignment at the Concord Road crossing.

The East Acton Village Planning Committee (EAVPC) is contemplating recommending bike lanes along Great Road (Route 2A/119) to provide improved bicyclist access to the village area. If the EAVPC opts to pursue a recommendation for bike lanes along Route 2A, the decision will be subject to MassHighway District 3 review, similar to the proposed crossing at Route 2A as discussed in Section 3.2.2. Any crosswalks proposed for Route 2A in the Village district will also be subject to MassHighway review.

Providing bike lanes or bike routes along town owned roads such as Concord Road and Wetherbee Street could be used to provide bicycle path users with a formalized connection to East Acton Village via bike lanes along Route 2A and possibly even to Acton Town Center. The operational and geometric characteristics of these Town-owned roadways will need to be assessed in further detail to determine their suitability to support bike lanes or routes. The installation of directional signage could be included as part of the design and construction of this project.

The revival of East Acton into a more village-like setting with strong pedestrian and bicycle connections will lead to the creation of a key destination point for bicycle path users.

Morrison Farm and Ice House Pond

Figure 43: Ice House Pond Looking North Along Railbed

The railroad crossing at Concord Road is also located adjacent to Ice House Pond, shown in Figure 43. Ice House Pond is an impoundment of Nashoba Brook and a portion of the Nashoba Brook greenbelt. The millpond was used as a source of ice until the 1950's. Currently, the pond is used for fishing, picnicking, and canoeing during the Spring, Summer, and Fall and for ice skating during the colder, winter months. The Town owns the pond and a small portion of the shore.[32] There is a parking area located in close proximity to the water's edge.

In 1997, Acton purchased the 32-acre Morrison Farm on the western edge of Ice House Pond and zoned the parcel General Municipal. The Town has preliminary plans from the Conway School of Design for trails and ball fields on this property. The rear portion of the Morrison property abuts Nashoba Brook and is also an important portion of the Nashoba Brook greenbelt.

Isaac Davis Trail

Figure 44: Historic Isaac Davis Trail

The railroad right-of-way crosses the Isaac Davis Trail, shown in Figure 44, beyond the Brook Street crossing. Isaac Davis was the Captain of the Acton Minuteman and was the first officer killed in the American Revolution. The Isaac Davis Trail, otherwise known as the "Line of March," was listed on the National Register in 1972. The Town was granted a trail easement by the adjacent property owner for passage by foot only, and only on Patriots Day and July 4th.[33] This location would be an ideal location for a kiosk with a description of the historical significance of the "Line of March."

Veterans Memorial Field

Figure 45: Veterans Memorial Field

The railroad right-of-way crosses Route 2A within a short distance of Veterans Memorial Field Little League facility, located at the intersection of Routes 2A and 27. Veterans Memorial Field, shown in Figure 45, includes two Little League Fields, lighting, scoreboards, fencing, irrigation system, seating areas, and handicapped access. There is also a small playground located on the site. This complex is a heavily utilized athletic facility.

The railroad bed runs parallel to the rear of the athletic facility and is separated from the field by Nashoba Brook and its floodplain. In this location, a wheelchair accessible boardwalk, similar to the one shown in Figure 46, may be needed to connect the proposed bicycle path to the lower parking area at Veterans Memorial field. An off-road connection to Veterans Memorial Field from the bicycle path is critical to discouraging users from travelling along the roadway shoulders of Route 2A/Great Road.

Figure 46: Example Boardwalk

Nashoba Brook Conservation Area

The railroad right-of-way abuts Nashoba Brook Conservation area between the Route 2A and Route 27 crossings. Nashoba Brook is rich in industrial heritage and ecological value. The Brook was the site of at least four mills, including a pencil factory site whose remains are located a short distance off the rail corridor on the Nashoba Brook Conservation Area. The bicycle path will help open up the Nashoba Brook riverine ecosystem for public enjoyment. Preservation of the natural setting and historical features of the corridor will play an important role in the design of the Acton section of the Bruce Freeman Bicycle Path.

Amenities such as rest stops, scenic overlooks, new exhibits, and kiosks similar to the one already constructed at the Pencil Factory site will serve to highlight focal points of the path and its surroundings. A stone dust walkway, near the trail connection to Nashoba Brook Conservation Area will take users near the remains of the Pencil Factory mill foundation (shown in Figure 47) and serve as a good rest stop for users. The 19th century pencil factory site is located a short distance from the railroad right-of-way.

Figure 47:
Old Stone Mill Foundation -
Pencil Factory Dam Site

North Acton Recreation Area Park

Figure 48: NARA Park

The Acton portion of the Bruce Freeman Bicycle Path crosses Route 27 near Ledge Rock Way. The North Acton Recreation Area (NARA) Park is a 40-acre community park located off of Ledge Rock Way. The park opened in 1999 and has become a regional recreation destination. Site amenities at NARA include a softball field, three soccer fields, a handicapped accessible walking path encircling the property, 3,000 seat outdoor amphitheater, handicap accessible beach, bath house, 9-acre pond for swimming, fishing, and boat rentals, parking for 200 cars, and a number of other seasonal recreational amenities. NARA Park is used by residents and non-residents for recreational and cultural programs throughout the year, including a summer evening concert series, summer camps, the July 4th celebrations, and Winterfest.

Bay Circuit Trail and Greenway

Figure 49: Bay Circuit Trail Map

The Bruce Freeman Bicycle Path will provide users with access to the Bay Circuit Trail and Greenway (shown in Figure 49) via a corridor at the Nashoba Brook Conservation Area. The Bay Circuit Trail and Greenway, the "outer emerald necklace," will link open spaces and parks between Ipswich and Duxbury. The trail and greenway system is listed as one of the State's recreation priorities. Within Acton, the trail runs through the Nashoba Brook, Spring Hill, Camp Acton, and Stoneymeade conservation areas. The bicycle path project crosses the trail network of the 125-acre Nashoba Brook Conservation Area, which also abuts the 185-acre Spring Hill Conservation Area by interconnected trail systems.

In Acton's 2002-2007 Open Space and Recreation Plan, the Town identified the need to make more of their conservation and recreation areas handicapped accessible, thus also improving accessibility for senior citizens and parents with young children.[34] Therefore, special attention will be given to providing links to the handicapped accessible amenities of public places along the bicycle path.

The extent to which the bicycle path route provides reasonable and safe access to all or many of these potential trip generators / attractions will help ensure that it will be patronized by the public. Issues regarding specific recommendations for the location of amenities will be an important part of conceptual design development.

3.5 Private Access Points [35]

In addition to providing users with access to publicly owned parcels, the design of the bicycle path should also consider connections to and across private property located adjacent to the railroad right-of-way. Properties located adjacent to the railroad corridor, which may desire a formal connection to the path, include commercial uses and private residential subdivisions. These formalized connections would be provided by ramp or ancillary path from the paved bicycle path within the EOTC managed right-of-way to property owned by a private landowner. The ramp or path would need to conform to the American with Disabilities Act Accessibility Guidelines (ADAAG). Conversations regarding private property connection points would need to occur during the design stages of the project.

Each connection will need to be evaluated by the EOTC on a case-by-case basis to confirm that the purpose of the connection is consistent with the Commonwealth's objectives. The evaluation would include an assessment of who benefits from use of the property, the proposed layout, use, and the specific rights, if any, to be granted specifically to the requesting party.

Any party who wishes to use EOTC-owned property must do so under a written agreement with EOTC. The process is as follows:

1. The requesting party should write a letter to the Manager of Alternative Transportation at the EOTC. The letter would need to indicate that they would like to use a portion of the property, and, if possible, identifying the location, use and the type of agreement they are interested in (i.e., license, lease, easement, sale).

2. EOTC will send the requesting party an Application for Use / Occupancy of EOTC Property.

3. The requesting party completes the Application and sends it back to EOTC, with an Application Fee.

4. EOTC reviews the request and either disapproves, approves or approves the requested Use / Occupancy with conditions. EOTC may request the requesting party to pay for an appraisal of the property, and, depending on the circumstances, may also ask them to complete a survey of the property.

5. Once all of that is done, EOTC will establish a value, and, if the parties agree, EOTC will prepare the appropriate document (usually a license) which will govern the occupancy.

In the usual case, EOTC would issue a revocable license agreement. In most cases, the agreement is terminable by either party upon 30 - 90 days notice, and would include the payment of an annual fee. The agreement would limit the use to specific uses identified in the agreement. Any construction would need to be approved in advance by EOTC, and would be referenced in the agreement. The applicability of Massachusetts General Laws Chapter 21 Section 17C would need to be in the context of the specific requests received. This law limits the private landowner's liability when no user fee is charge for use of land for recreational purposes.

3.6 Parking Areas

The bicycle path would be easily accessible to residents living in close vicinity to the at-grade crossings. However, it is anticipated that most people would be parking their vehicles to access the bicycle path.

There is a need for increased parking at access points along the path. These access points will not only accommodate people from the immediate area, but also those who have traveled further to use the bicycle path. It is anticipated that once linkages on either end of the bicycle path were made, overall usage would increase and the path could also begin to be used for alternative forms of commuting.

The Town should encourage bicycle path parking at the existing parking areas located near the termini of the project. Furthermore, additional areas must be developed to allow people to

park their automobiles while they enjoy the path. Each respective parking alternative will have to be further explored during the design stages of the project to assess factors such as ownership, lot size, practicality, grading, and safety issues before improvements are developed.

Existing Parking Facilities

The dirt parking lot at Ice House Pond, near the Concord Road crossing, has the capacity to handle approximately 12 cars. With the understanding that there is limited parking availability at the Pond, additional parking areas should be incorporated into development plans for the Morrison Farm property. This additional capacity should be designed to handle the expected increase in bicycle path use when future connections are made across Town boundaries.

Discussions with the Rail Trail Committee and consultant observations highlight that there is insufficient parking capacity at Veterans Memorial Field during weekend sporting events. The Town is currently conducting a study to identify options for overflow parking due to the popularity and utilization of this particular field. Therefore, the parking lot at the field should not be considered an option for weekend bicycle path parking. It is likely that only weekday users may be able to find parking at the Veterans Memorial Field lot.

NARA Park, near the Route 27 crossing, has additional parking capacity that could be used by bicycle path users. There are two existing paved parking areas at NARA Park that together can handle a total of 170 cars. The lower lot (See Figure 50), near the pond, has 100 parking spaces and the upper parking lot, near the amphitheater, has 70 parking spaces. The Town is currently conducting a study to identify options for overflow parking at the upper lot. There are already bike racks located at the NARA Park facility.

Figure 50: Lower NARA Parking Lot

Also, the Town has been proactive in securing a recreation easement for a bicycle path parking lot on the site of a new storage facility near the Acton/Carlisle town line. The unimproved six car dirt lot was secured in the fall of 2002.

Figure 51: Unimproved Parking Lot

Parking Alternatives

Similar to public access agreement for the six car lot discussed above, the Town could secure additional recreation easements or accept land gifts with use restrictions, such as, "to be used for the purpose of accessing the Bruce Freeman Bicycle Path....". The Town has accepted public accesses (generally associated with conservation land) via a number of methods in the past.

One area which warrants consideration is in the vicinity of the Brook Street crossing. The rear parking lot of the Plaza abuts the railroad right-of-way at the Brook Street crossing. Donelan's Supermarket and other businesses located within the Plaza stand to benefit from the improved access to the plaza by pedestrians and bicycle path users. The Town should initiate discussions with the owners of Gould's Plaza regarding the possibility of securing a recreation easement on a portion of the rear parking lot. The number of existing parking spaces at businesses are typically based on the local zoning requirements. Therefore, those spaces cannot be officially dedicated for another use (i.e. bicycle path use). Some business may have spaces in excess of zoning requirements, though the Town does not maintain an inventory. Only when there are 'surplus' spaces would businesses be allowed to donate or lease parking spaces for path access.

Another parking alternative could possibly be developed in the vicinity of the Route 2A crossing. The Town was recently deeded a parcel of land on the northern side of the Route 2A crossing. The Town Engineer noted that the parcel contained a plateau area above the floodplain that could possibly be converted to a parking area. This location may present design and construction difficulties due to its proximity to wetlands and sensitive environmental resources.

3.7 Landscaping

A key element in the development of the bicycle path will be improving the visual character of the path and mitigating the impact of path development on abutting properties. Issues regarding the development of interpretive signing and specific recommendations for the location of amenities will also be an important component of the overall bicycle path design.

The proposed bicycle path study area includes five at-grade road crossings. Specific landscaping treatments should be developed at each crossing that do not interfere with their operational effectiveness. The Town of Acton has already retained a grant for the services of the Cecil Group to prepare a landscaping plan for East Acton Village Green, the two small pieces of Town-owned land at the intersection of Great Road and Concord Road, as part of the East Acton Village Planning Committee's efforts. The two parcels are located on either side of the railroad right-of-way. Entries to the bicycle path must be clear, safe, and inviting.

Along most of its alignment, at least one side of the existing railroad corridor is abutting woodland and wetland areas. Due to the width of the existing right-of-way and the rail bed, little impact is expected to the woodland and wetland properties adjacent to the proposed bicycle path. The design of the path alignment, grading and drainage should focus on minimizing the extent of disturbance to the existing vegetation. In most locations, existing vegetation is growing between adjacent properties and the track, which provides some screening, particularly during the growing season. Suitable bordering native vegetation should be preserved where possible. New plantings should be added in some locations to accent existing vegetation. Invasive exotic species will need to be removed during construction to discourage regrowth. New plantings should be self-sustaining native species that provide wildlife habitat value. Plantings will need to be tolerant of drought and snow loading, and will need not require regular pruning.

The proposed bicycle path will also be visible to many of the abutting residential and commercial properties, especially in the stretch of right-of-way between the crossings at Wetherbee Street and Route 2A and through North Acton. The boundaries of the railroad right-of-way will need to be clearly delineated. However, tall chain link fences are unattractive and compromise the safety of users. The use of wood post and rail fences or, alternatively, timber guardrails will need to be explored in areas where continued vehicular encroachment or the possibility of users traversing sideslopes is a concern. Low growing native planting would be massed in natural forms along the wood fencing or guardrail, interplanted with high-branched shade and flowering trees. This layout will create a feeling of separation, but still preserve views into the corridor for surveillance.

Figure 52: Rear of Commerical Building Along Great Road

Occasional evergreen trees may be used to screen truly objectionable elements such as the rear of commercial buildings (See Figure 52). The low plantings could be thorny to discourage trespassing. Abutters may request that additional screening vegetation or fencing be installed.

3.8 Mapping Requirements

Following is an outline of the mapping requirements for the Acton segment of the Bruce Freeman Bicycle Path. The selected survey firm would be responsible for selecting the most economical option for surveying the railroad corridor. It is likely that the survey base plan would be developed using a combination of aerial photogrammetric mapping techniques and on-ground survey. The scope of survey would be limited to the railroad right-of-way. If desired, for information purposes, building footprints for parcels located adjacent to the right-of-way could be added to the base plans using available 1"=200' Assessor's maps. All work performed shall be in conformance with the MassHighway's Survey Manual and Metrication Guide and the plans shall utilize MassHighway's AutoCAD® layering convention.

Record Review and Reconnaissance

- Perform research at the Town of Acton and various utility companies to acquire record information for the proposed route.

- Perform a reconnaissance to recover survey control monuments, bench marks, and property and roadway monumentation.

Field Surveys

- Establish four pairs of semi-permanent monuments within the project area. These monuments will be located using GPS technology and will be referenced to the North American Datum of 1983 (NAD 83). If existing traverse stations are recovered in the vicinity of the project, these traverse stations will be used in lieu of new semi-permanent monuments.

- Perform level surveys to relate the project elevations to the North American Vertical Datum of 1988 (NAVD 88). Elevations shall be of Third Order accuracy. Surveyor will be responsible for converting Town record plans to reference NAVD 88.

- Perform field location surveys utilizing Geodimeter "Total Station" electronic measuring instruments. Detail to be located shall include edge of road or right-of-way and centerline elevations at intervals sufficient to allow the development of 2-foot contours. Other detail to be located shall include utility structures, buildings, visible foundations and other historic features, utility poles, signs, treelines and isolated trees in excess of 12" diameter, driveways, walls, fences, evidence of property lines, right-of-way monumentation, and wetland flags within the rail corridor right-of-way.

Preparation of Plans

- Perform calculations to determine the elevations and coordinates of the points located during the field surveys.

- Develop contours at 2-foot intervals utilizing digital terrain modeling (DTM) techniques and show spot elevations to adequately depict the topography of the proposed route.

- Compile the location of utilities within the limits of the survey utilizing surface evidence located during field surveys and available record information.

- The sidelines of the roads and record construction and/or railroad baselines shall be compiled using available information and shown in their approximate location. It is not required to perform a definitive survey of the sidelines, baselines or property lines. Abutting parcels shall be compiled from assessor's plans.

- Prepare a Topographic Plan of Land, in "roll plan" format, at a scale of 1:500, on paper which shall depict the information located in the field as well as utility information. The plan, as well as the DTM data files, will also be delivered to the Town of Acton in AutoCAD® format on Compact Disk.

Weather permitting and barring delays due to unforeseen circumstances, it is anticipated that the above services could be delivered within 10 weeks of notice to proceed.

3.9 Environmental Permitting

As stated earlier, the railroad right-of-way travels through several environmentally sensitive areas. However, based on the Consultant's site walk and experience on previous projects, permitting and environmental impacts can be either avoided or mitigated.

The project site will likely contribute stormwater runoff to adjacent wetland areas and waterways. Special consideration will need to be given toward the protection of these resources. The goal of stormwater design will be to maintain existing swales and drainage patterns, allow rainwater to percolate into the soil, avoid point source discharge, and meet current Massachusetts Stormwater Management Guidelines and Phase II of the National Pollutant Discharge Elimination System Stormwater program. Plunge pools or sedimentation basins will need to be provided in locations where a concentrated flow is anticipated.

There are numerous areas of wetlands along the right-of-way which will first have to be delineated, with the subsequent design being tailored so as to minimize impacts to these resources to the extent possible. Close cooperation with the local Conservation Commission as well as State and Federal agencies will be required with regard to wetland issues.

Along the right-of-way alignment, several existing granite stone culverts convey flow from one side of the alignment to the other side of the alignment. Given that the bicycle path should not significantly alter the hydrologic characteristics of the watershed area tributary to each crossing, these culverts will remain. The structural integrity and proper functionality of these culverts will need to be evaluated during the early stages of the design process.

The following is a list of the anticipated environmental permits.

3.9.1 Wetlands Protection Act

Notice of Intent (NOI)

The Wetlands Protection Act governs activities affecting wetlands through the local Conservation Commissions with Massachusetts Department of Environmental Protection (DEP) oversight. The DEP's most recent revision to the wetlands regulations was October, 1997. In general, for bikepaths, any activity A . . . which will remove, fill, dredge or alter an area subject to regulation (e.g., wetlands, rivers, and floodplains) requires the filing of a Notice of Intent (NOI).

Also, any activity within 100 feet of an area subject to regulation (called the Buffer Zone) which, in the judgement of the issuing authority, will alter an area subject to protection, requires the filing of a NOI. For projects being funded and reviewed by MassHighway, the NOI should be submitted after the 75% design phase.

Rivers Protection Act

The Rivers Protection Act amended the Wetlands Protection Act in October, 1997 by protecting the riverfront area; the area that extends 200 feet on both sides of a perennial stream. An intermittent stream (a stream that does not flow the entire year) is not included in this category. A project can be located in the riverfront area A<u>only</u> if there are no practicable and substantially equivalent economic alternatives <u>and</u> if there will be no significant adverse impacts to the riverfront area. Fortunately, the guidelines note that some activities may not be able to meet the criteria and yet have no adverse impacts on the riverfront area. Footpaths fall into this category. However, a NOI Supplemental Form for Riverfront Area still needs to be filed.

Bordering Land Subject to Flooding

Bordering Land Subject to Flooding (BLSF) is an area which floods from a rise in a bordering waterway such as a river, stream, or lake. A review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps for the Town of Acton revealed that several areas along the rail corridor are located within Zone A1, areas of 100-year flood.

Compensatory storage is required for all flood storage volumes that will be lost as a result of the construction of the proposed bicycle path. The total volume of flood storage lost, if any, will be determined when profiles and critical sections are developed during the 75% design stage.

Stormwater Management Policy

Also under the oversight of the Conservation Commission is the Stormwater Management Policy. These standards regulate water quality (pollutants) and water quantity (flood control) through the use of Best Management Practices (BMPs). BMPs could include detention ponds, silt fences, haybales, etc. If applicable, include this two page form with your NOI.

3.9.2 NPDES General Permit for Discharges from Construction Activities

Phase II of the National Pollutant Discharge Elimination System (NPDES) Stormwater program was published in the Federal Register on October 8, 1999. As outlined in Phase II, any construction activity that will disturb one or more acres and has the potential to have a discharge of stormwater to a water of the United States must either have a permit or have qualified for a waiver. Construction activity here refers to the actual earth disturbing construction activities and those activities supporting the construction project such as construction materials or equipment storage, maintenance, measures used to control the quality for stormwater associated with construction activity, or other industrial storm water directly associated with construction activity.

As proposed, the Acton portion of the Bruce Freeman Bicycle Path consists of 4.6 miles of paved path that is ten feet wide with a cleared but unpaved shoulder on either side. The paved portion of the project alone will result in approximately 5.6 acres of disturbed area, therefore exceeding the 1-acre threshold and requiring a permit. In order to apply for permit coverage the operator will need to submit an NOI, Stormwater Pollution Prevention Plan (SWPPP), and documentation of eligibility to the Environmental Protection Agency (EPA).

Phase II has also required operators of regulated small municipal separate storm sewer systems (MS4s) to implement and enforce a program that will address stormwater runoff from new development and redevelopment projects that disturb greater than one acre and discharge to the municipal system. The Town of Acton is a partially regulated small MS4 and may have implemented such requirements by the time design are developed for this project. If this is the case, the project may need to address stormwater management at some level even if it is not within the jurisdiction of the Wetland Protection Act and be required to follow the MA DEP Stormwater Management Policy.

3.9.3 Massachusetts Environmental Policy Act (MEPA)

The MEPA office is part of the Executive Office of Environmental Affairs (EOEA). The purpose of MEPA is to evaluate environmental impacts of a proposed project. An Environmental Notification Form (ENF) or Environmental Impact Report (EIR) is required to be submitted to MEPA if certain environmental impacts or review thresholds are exceeded. Although there are many review thresholds for all types of projects from airports to electric generating facilities, the two most common thresholds to trigger an ENF for bikeways are as follows:

- Creation of 5 or more acres of impervious area. This translates to 4.1 miles for a 10-foot wide bicycle path and 3.4 miles for a 12-foot bicycle path.
- Alteration of 5,000 or more square feet of bordering or isolated wetlands. This can be exceeded fairly easily if the bicycle path is not on an inactive railroad corridor.

An ENF should be submitted after the 25% design plans have been developed. Based on the above criteria, an ENF will be required as the total length of the Acton portion of the Bruce Freeman Bicycle Path (4.6 miles) will result in over 5 acres of impervious area.

3.9.4 National Environmental Policy Act (NEPA)

Categorical Exclusion (CE) Checklist

As most bikeway projects involve Federal funds (TEA-21), compliance with NEPA will be required. Construction of bikeways almost never cause significant environmental impacts, and as such are automatically classified as CEs and, except in unusual circumstances, do not require FHWA approval. The checklist, as well as the detailed responses, locus map, and rare species habitat, may total over ten (10) pages.

4 IMPLEMENTATION PLAN

4.1 Preliminary Cost Estimate

FST developed a preliminary cost estimate for the construction of the 4.6-mile segment of bicycle path (See Table 15). This estimate assumes one 10-foot wide path, with minimum 2-foot shoulders except between the Acton/Concord Town Line and the Route 27 crossing near Ledge Rock Way, where a 4-foot shoulder on one side is proposed. The 4-foot shoulder will support additional uses including a soft walking surface and equestrian use. Further, it assumes that each of the six existing railroad bridges will be removed and replaced with pre-engineered bridge structures as discussed in Section 3.3. This estimate was based on Consultant observations during a site walk, current MassHighway construction costs, as well as the team's experience on other bicycle path projects.

Table 15: Preliminary Cost Estimate

Work Description	Unit	Quantity	Unit Price	Cost
Clearing and Grubbing	A	5	$10,000	$50,000
Track Excavation	LF	48,900	$20	$978,000
Disposal of Treated Wood Products	TON	1,465	$400	$586,000
Excavation	CY	28,400	$10	$284,000
Bituminous Concrete Pavement	TON	5,970	$50	$298,500
Gravel Borrow	CY	17,400	$15	$261,000
Loam Borrow	CY	1,500	$25	$37,500
Wood Rail Fence	LF	12,300	$20	$246,000
Pre-Engineered Bridge Structures (6 Total)	LS	1	$375,000	$375,000
Drainage	LS	1	$16,500	$16,500
Landscaping & Amenities	LS	1	$130,000	$130,000
Wetlands Protection	LS	1	$33,000	$33,000
Subtotal				$3,295,500
Contingencies (15%)				$3,789,825
Inflation Adjustment (FY2008)				$603,620
			Total	$4,393,445
			Say	$4.4M

Without preliminary design, it is difficult to estimate the cost of specific intersection treatments and other design specific items of work. Therefore, a contingency cost was included in the estimate to account for items such as sign and pavement markings, bollards, etc. The estimated cost was escalated using a flat inflation rate (3%) and compounded annually to estimate for expected increases in the cost of construction before the bicycle path is actually built.

The estimated $4.4 million dollar cost does not include the installation of a traffic control device at the Great Road (Route 2A/119) crossing. As discussed in Section 3.2.2, FST recommends that, at a minimum, a flashing beacon be installed at the intersection. The

estimated cost of installing a flashing overhead beacon and appurtenances is approximately $7,500. FST also recommends that consideration be given to installing a signalized pedestrian crossing at the Great Road (Route 2A/119) crossing. The estimated cost of installing a traffic signal and appurtenances at this location is approximately $50,000. A warrant analysis will need to be conducted during the preliminary design stages of the project to determine if a signal is required at this crossing.

The proposed typical bicycle path cross section calls for removal of the tracks and ties along the railroad corridor. FST has prepared a preliminary cost estimate associated with the removal of the existing rails on a linear foot basis and the disposal of treated wood products on a per ton basis. FST reviewed bids received from contractors on other MassHighway advertised bicycle path projects across the state (as published in the CIM Construction Journal) and compared those numbers to the 2001 MassHighway Weighted Average Bid Prices. FST's current estimate places the total cost of these two items of work at approximately $1.6M for the 4.6-mile corridor. Removal of the existing rails is a labor intensive item of work that includes cutting the track into manageable sections for hauling purposes and removing tie plates, spikes, pins, rail anchors, and all other rail hardware. Based on conversations with contractors on local projects, the scrap metal value of the steel track is so low that it would not help offset the cost of removing the tracks and ties. Disposal of the treated timber cross ties includes the cost of removing and stockpiling the ties and transporting the ties to an approved waste facility in accordance with all local, state, and federal regulations.

Within the roadway layout, the railroad tracks have been paved over at three of the bicycle path / roadway intersections in the project area. The tracks have been paved over at the Concord Road, Route 2A, and Wetherbee Street.[36] Consultant observations indicate cracks in the pavement along the rail alignment at the Great Road (Route 2A/119) crossing. FST recommends full depth roadway construction at this crossing to deter future pavement deterioration and improve surface conditions for pavement markings. Removal of the rails and ties crossing at this location would require prior approval from MassHighway since Great Road (Route 2A/119) is a state highway. At the current time there does not appear to be any pavement defects at the Concord Road or Wetherbee Street crossing as a result of the paved over tracks. Therefore, it is unnecessary to remove the paved over tracks at these two locations. The tracks have already been removed at the Brook Street and Route 27 crossings.[37] The cost of full depth roadway reconstruction at the Great Road (Route 2A/119) crossing is covered in the contingency cost built into the preliminary cost estimate. Installation of a traffic control device at the Great Road (Route 2A/119) crossing will also require excavation within the roadway limits.

As stated previously, the preliminary cost estimate provides the Town with a magnitude of cost for certain items of work related to the construction of the 4.6-mile bicycle path. A more accurate estimate would need to be developed during the preliminary design stages of the project in order to program the necessary funding.

4.2 Project Funding

Funding for the design and construction of the bicycle path will need to be secured from local, state, or federal sources. There are a number of factors to consider when evaluating sources of funding assistance. Most importantly, the Town must assess if the project meets the eligibility requirements of the funding source. With respect to bicycle path development, certain programs require that the project emphasis be transportation-oriented whereas other programs focus on recreation-related paths.

As the bicycle path project moves forward from the conceptual stage, it will also be important for the Town to identify opportunities to leverage a combination of local, state, and federal funding sources to advance the short-term and long-term goals of the bicycle path. In general, most federally funded projects require a state or local match and many state agencies also require a local match. The policy and program provisions of each funding source may permit a community to draw upon funds from different local, state, and federal sources as matching funds. Some programs require a cash match whereas other programs allow in-kind contributions or "soft" matches. Similarly, some funding programs are administered on a reimbursement basis, which would require the Town to allocate funding up-front and be incrementally reimbursed as the project proceeds from concept to construction. The Town and bicycle path supporters should also consider pursuing private funding from sources such as philanthropic foundations or corporations located in the community.

4.2.1 Funding Eligibility

Recent conversations with the EOTC, MassHighway, and the Metropolitan Area Planning Council (MAPC) indicate that no definitive statement can be made regarding the project's eligibility for federal funding at the current time. The Federal Highway Administration (FHWA) establishes the funding eligibility guidelines for federal-aid programs. The FHWA will review the terms of the property agreements when evaluating the eligibility of bicycle path projects for federal-aid. The EOTC, MassHighway, and MAPC, as well as other regional planning agencies, are often involved in project discussions with the FHWA relative to bicycle path project development.

As discussed in Section 2.4.2, the EOTC has expressed their willingness to provide the Town with a license agreement to design, construct, and maintain a bicycle path within the railroad right-of-way. The terms of the license agreement would be for a one-year term with automatic renewal unless either party gave the other 30 days notice. The EOTC could rescind the agreement for transportation-related activities (i.e. reinstatement of rail service). The one-year license term is the result of Division of Capital Asset Management (DCAM) policy. The EOTC is empowered to execute "short-term" license agreements for Commonwealth properties assigned to the agency. EOTC also executes "long-term" license agreements for its properties, but must do so through DCAM. The EOTC is in the process of working on projects that involve both short and long-term license agreements.[38]

The Town should work with the EOTC, MassHighway, and MAPC to maximize the project's eligibility for federal funding. Together, these entities can determine which type of property

agreement will allow the Acton segment of the Bruce Freeman Bicycle Path project, or any other, to obtain federal funding while upholding DCAM policy relative to railroad rights-of-way. Addressing these eligibility and funding concerns during the conceptual design stages will help eliminate any questions or uncertainties that could impede the progress of the project in the future.

4.2.2 Transportation-Focused Funding Programs

When applying for transportation-focused funding programs, it will be important for the Town to stress the project's consistency with transportation plans at the local and regional level.

At the local level, the proposed bicycle path will be a strong addition to the Town of Acton's transportation network and will help expand the Town's pedestrian and bicyclist facilities. During the 1998 Town of Acton Master Plan Update process, residents expressed an interest in increasing the number of ways to get around town without having to use a car. Residents supported the creation of a network of bike paths both locally and regionally to serve as a transportation alternative to car travel.[39] The recently drafted Town of Acton Open Space and Recreation Plan: 2002 – 2007 reconfirmed the residents desire to expand the Town's bicycle and pedestrian facilities by listing bike paths as their top recreation priority.[40] The Town's Open Space and Recreation and Plan sets forth a five-year plan for the Bruce Freeman Bicycle Path. The plan includes a feasibility study, survey, and grant research to position Acton for available funding for construction of the path. Throughout the five-year planning period, Acton has placed a high priority on public outreach and obtaining access to publicly owned land.[41] The Town of Acton has also undertaken an East Acton Village Planning and Transportation Study. The goals of the East Acton Village planning efforts are to promote and foster a village environment in East Acton that is reflective of both the goals of the Acton Master Plan and the wants and needs of key stakeholders in the area. The recently completed transportation study for the East Acton Village area states that one of the primary goals and objectives of the effort is to promote a sense of community within the village. The transportation study specifically highlights that improved bicycle access and safety within the village area will help the Town meet this objective.

At the regional level, the proposed bicycle path will provide an important link to communities north and south of Acton. The Acton section of the Bruce Freeman Bicycle Path will eventually extend north to the segment of Bruce Freeman Bicycle Path between Lowell and Westford slated to begin construction in 2003. The southern end of the path will extend through the Town of Concord and provide an important transportation link to the MBTA Commuter Rail Station in West Concord. From Concord the bicycle path will extend south along the railroad right-of-way to South Sudbury. The Town of Framingham has commissioned a Rail Trail Task Force to investigate the possibility of securing the unused railroad right-of-way from Framingham Center to South Sudbury, a distance of 4.8 miles, currently owned by CSX Transportation. Extending the project from South Sudbury through Framingham would also link to the MBTA Commuter Rail Station in Framingham Center.[42] Once linkages on either end of the Acton segment of bicycle path are made, the path could then be used for alternative forms of commuting to communities between Lowell and Framingham. The bicycle path would connect users to the MBTA Commuter Rail facilities in

West Concord and Framingham Center and thus serve as an important link in the regional intermodal transportation network. The bicycle path also has to potential to connect to the proposed Central Mass Rail Trail, an east to west transportation corridor across Massachusetts that may one day link Boston and Northampton.[43]

The Bruce Freeman Bicycle Path in its entirety, between Lowell and Sudbury, is listed as one of eight proposed regional trails in the Boston area in the Boston MPO Regional Transportation Plan 2000 - 2025, the guidance document for future transportation program and project investments in the Boston region. The Boston MPO Regional Transportation Plan 2000 – 2025 includes an entire chapter on bicycle and pedestrian transportation. The chapter highlights how connecting trails to other modes of transportation has the potential to increase trail usage and public transit ridership. The Plan also recognizes the potential for short trails to improve mobility and safety for users within and across community boundaries. The Plan takes a strong position in stating that "relevant agencies need to resolve right-of-way and funding issues so that locations for new trails can be identified and so that the regional proposals that have been recommended through feasibility studies can move forward."[44] Further, the recommended plan for projects to the year 2025 confirms the Boston MPO's intent to continue funding various types of transportation enhancement activities and bicycle and pedestrian projects.[45] The Boston MPO has begun work on its 2004-2025 Regional Transportation Plan (2004 Plan). The 2004 Plan will build on the work that was performed for the last update to the document (March 2002).[46]

Transportation Enhancement Program

The MAPC also coordinates the review of Transportation Enhancement projects for the Boston region. The Transportation Enhancement Program was originally funded through the federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and continued via the Transportation Equity Act for the 21st Century (TEA-21). The six-year $247 billion reauthorization of the transportation bill is entitled "The Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003" (SAFETEA), which has also been referred to as TEA-3.[47] The SAFETEA bill sets aside ten percent of the Surface Transportation Program (STP) funds for the Transportation Enhancement Program.

Transportation Enhancements funds are a tool by which communities can pursue transportation-related projects that are not typically eligible for funding under more traditional transportation funding programs. Only projects requesting more than a total project cost of $50,000 in Transportation Enhancement funding will be considered.

In order for the project to be considered for the Transportation Enhancement Program, the Town of Acton will need to apply for funding through a two step pre-application / final application administered by the MAPC Transportation Enhancement Selection Committee. The Committee is responsible for selecting which regional projects are eligible for consideration as Transportation Enhancement Program-funded projects. Selected projects are reviewed for eligibility and preparedness for implementation before a project is forwarded to MassHighway and the State Transportation

Enhancement Steering Committee. Included in Appendix C is a copy of the most recent memorandum from the MAPC outlining the submission deadlines for this year. FST has also included the most recent edition of the Commonwealth of Massachusetts's "Transportation Enhancement Program" Guidelines in Appendix D. These guidelines include the application form.

The State Transportation Enhancement Steering Committee seeks projects that are "modestly sized, both in cost and scope, and that can be implemented in a timely fashion."[48] Beyond the limited funding associated with the Enhancement Program, eligible projects must be *directly* related to the intermodal transportation system and fall under one or more of the thirteen enhancement categories listed in the memorandum included in Appendix C. Further, applicants must be prepared to provide a local funding commitment comprised of a cash match in the amount of 10% of the total project cost. The remaining project cost is funded 80% federal and 10% state. Most communities will fund the engineering design to meet their cash match. The engineering fee can range from 10 percent to almost 20 percent depending on the number of structures and extent of permitting. It is possible that a community can request the portion of the design fee which is over 10 percent in their application for Enhancement funds. The Town must also recognize that the Transportation Enhancement Program is a reimbursable program rather than a grant program. Some in-kind services may also be eligible for the local match. Eligibility of in-kind services is handled on a case-by-case basis and must meet the approval of both the State and Federal Highway Administration (FHWA).

As stated in the guidelines, "the services of a MassHighway-approved consultant are required in most cases to complete the pre-application and full application required for the Enhancement Program. A consultant selected by the community will be able to complete project designs, develop accurate cost estimates, obtain the necessary permitting and address both right-of-way and environmental issues. Project proponents must also be in a position to assign a community liaison not only to address issues related to the application but also, if selected and monies are awarded, as the project moves into the construction phase."[49] Design consultants must be selected in accordance with Federal and state laws and procedures in order to be credited toward the local and/or state share.

Congestion Mitigation and Air Quality Improvement Program

A bicycle path project often fits the eligibility requirements for both the TE Program and the Federal Congestion Mitigation and Air Quality Improvement Program (CMAQ) of SAFETEA. CMAQ is a transportation air quality improvement program that provides funding for both bike and pedestrian facilities that serve to reduce automobile travel. Project sponsors must complete a CMAQ Air Quality Analysis Worksheet for Bicycle and Pedestrian Projects to document a quantifiable reduction in auto emissions and/or congestion to be eligible under this program. Similar to the Enhancements Program, designs must adhere to MassHighway standards. Local project sponsors should contact the MAPC for more information.[50]

Transportation Improvement Program (TIP)

The Town of Acton should also work with the MAPC to ensure that the project is given full consideration in the Boston Metropolitan Planning Organization (MPO). programming process. Depending on the adequacy of project funds and project state of readiness, the Town should make and effort to have the bicycle path programmed for inclusion on an upcoming TIP. The TIP is a multi-year capital program of transportation projects that is updated each year. The TIP includes a comprehensive listing of transportation projects planned for implementation over the next several years, regardless of funding source. For a project to proceed to implementation from the TIP list, proponents must ensure that all designs are completed with permits and approvals in place. The TIP programming also dovetails with the TEP final application process (discussed in the previous section) which involves the MassHighway Project Review Committee (PRC) and Boston MPO.

The TIP provides funding beyond the local sources for transportation projects and includes both federal-aid and non-federal aid (NFA) projects. When programming the TIP, the MAPC seeks to select projects that fall within region specific federal-aid funding targets and NFA funding estimates established by MassHighway. The MAPC has the ability to prioritize NFA-funded projects for the MPO's consideration. Also, in order to receive federal transportation funding, a project must be eligible and included on the TIP. The TIP is programmed by MAPC and endorsed by the Boston MPO), at which time it is forwarded to MassHighway and the EOTC. The TIP's produced by each respective regional planning entity are then combined to form the State Transportation Improvement Program (STIP). The STIP is forwarded to the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the Environmental Protection Agency (EPA) for approval. Only after obtaining approval, can the projects included on the STIP receive federal-aid transportation funds. The typical federal funding split is 80% federal funds and 20% state funds for implementation; the design is usually paid for at the local level.

The Boston MPO is updating their TIP criteria and project information forms. There is a specific TIP Project Information Form for Bicycle and Pedestrian Projects, which will be downloadable from the MPO's website near the beginning of 2004.[51] The questions posed on the form correlate to the problem indicators, evaluation criteria, and state of readiness indicators that the MPO uses to prioritize future projects. The project proponent, in this case the Town of Acton, will be responsible for completing the form. The form should be sent to Central Transportation Planning Staff (CTPS), and they will in turn distribute the form to the MPO members and others accordingly. The TIP project forms however should not be seen as a one step process to project initiation. Projects using state and/or federal funding sources still need to go through the MassHighway PRC approval process that is initiated through the district offices, as described in the following paragraphs. The MAPC would still like to be advised of PRC and other efforts at project initiation with the district offices and any others.

Concurrently, the Town should initiate correspondence with the MassHighway District 3 Highway Director. A request in the form of a letter should be submitted to

the District that discusses the proposed improvements, the level of local support for the project, a commitment that the project will be designed by the Town, and that any right-of-way issues will be the responsibility of the Town. Inclusion of the completed feasibility study for the Acton portion of the regional bicycle path will assist the District 3 Highway Director to assess project demand, existing conditions in the project area, and the scope of proposed improvements. To advance the project, the Town needs to secure concurrence from both the MassHighway District 3 Highway Director and the Department's PRC. The District office will review the information provided by the Town and evaluate the local support for the project. If the District concurs with the project need, it will submit a favorable request to the Department's PRC, at which time the project is given a PROJIS number. The MHD PRC will then decide whether to approve or disapprove the proposed project as a Department-sponsored project. Given approval, the Town should continue to work with the MAPC in an effort to have the project placed on the TIP.

4.2.3 Recreation-Focused Funding Programs

There are also state, local, and federal programs that help fund recreational and environmentally focused projects. When applying for funds under these programs, it will be important for the Town to stress the conservation and recreation potential of the path. The bicycle path will meet the recreational needs of its users as well as create a greenway through neighboring communities that links conservation and recreational areas.

Department of Conservation and Recreation (DCR) Grants

There are two grant programs administered by the Massachusetts Department of Conservation and Recreation – Department of State Parks and Recreation (formerly the Department of Environmental Management) that the Town could apply for to help fund a portion of the bicycle path: DCR Greenways and Trails Demonstration Grant and Recreational Trails Program

First, the Town should consider applying for a DCR Greenways and Trails Demonstration Grant in the future. Unfortunately, this grant program was recently suspended until further notice due to state budgetary constraints. The Town, through its Land Stewardship Committee, received a Greenways grant to construct an informational kiosk at the Pencil Factory Site in the Nashoba Brook Conservation Area. The DCR Greenways and Trails Demonstration Grants Program provides grants of up to $5,000 to support innovative greenway and trail projects throughout Massachusetts. The DCR will also consider requests of up to $10,000 for multi-town greenway projects that promote linkages across neighboring communities. The grant monies can be used for activities such as greenway and trail planning, mapping and resource assessment, greenway related public education and outreach, and greenway and trail management, maintenance, and expansion. In the past, grant applications that enlist the help of local volunteer and community groups have been looked at favorably by the grant administrator. As discussed in Sections 2.3.3 and 3.4, the proposed bicycle path is located within the Nashoba Brook greenbelt. The bicycle path will open up portions of the Nashoba Brook ecosystem for public enjoyment and

provide connections to the Town's contiguous conservation areas and the Bay Circuit Trail and Greenway. If the Town intends to use the grant to fund work within the EOTC owned right-of-way, the Town will need to obtain written permission from the EOTC as part of the application.[52]

The second grant program is the Recreational Trails program, a federal TEA-21 program scheduled to continue its current apportionment formula under the SAFETEA reauthorization bill for a total of $360 million over the 6-year time frame. This grant program provides funding support for a variety of trail development and maintenance projects and is administered on a reimbursement basis by the DCR, in partnership with the Massachusetts Recreational Trails Advisory Board and MassHighway. The Massachusetts Recreational Trails Advisory Board is comprised of individuals representing the interests of various non-motorized and motorized recreational activities. The Recreational Trails program funds up to 80% of each trail project, with at least 20% of the total project cost funded by other sources. The match can consist of money from other sources such as non-federal grants, donations, or municipal funds. A "soft match" in the form of materials, labor, and in-kind services is also permitted. "Soft match" contributions include paid labor, volunteer/donated labor, purchased materials and services, and donated labor and materials. Grant amounts, not including the match, may range from $2,000 to $50,000, with requests greater than $50,000 being considered for regional or statewide projects. Unlike the projects programmed for inclusion on the TIP or through the Transportation Enhancement Program, the Recreational trails program requires that projects be primarily recreation rather than transportation-oriented. Priority will be given to projects that create or facilitate physical improvements that seek to protect or enhance the site's natural and cultural resource values. Proposed activities should satisfy a recreational demand and seek to accommodate a variety of compatible uses emphasizing the multi-use nature of the trail. Historically, grant applications seeking funds for bicycle path planning and design activities have not been looked at favorably by the Advisory Board.[53]

Community Preservation Act [54]

The Community Preservation Act (CPA) was passed at the Town of Acton's Annual Town Meeting in April 2002 and subsequently approved by voters at the November 5, 2002 election. The CPA is enabling legislation designed to help communities plan ahead for sustainable growth and raise funds to achieve their goals. Once approved by the municipality, the CPA remains in effect for a minimum of five years. Acton passed the CPA with a community-wide real estate property surcharge of 1.5 percent. The surcharge is based on an owner's real estate property tax and not on assessed valuation. Acton also allowed for two additional exemptions to the CPA surcharge for 1.) property owned and occupied by a person who would qualify for low income housing or low or moderate income senior housing in the town and 2.) the first $100,000 of taxable value of residential real estate. The funds raised are used to create a local Community Preservation Fund. The state will provide matching funds through Community Preservation Trust Fund to communities that have approved the CPA and collected tax revenue. The amount of state match, up to 100%, depends on

how much money is in the state's Community Preservation Trust Fund and how many communities have enacted the CPA. The Town also established a Community Preservation Committee whose charter is to make annual recommendations to the Town's legislative body on how the money should be spent.

The Town must allocate a minimum of ten percent of the annual revenues of the fund for each of three core community concerns: acquisition and preservation of open space, acquisition and preservation of historic buildings and landscapes, and creation and support of affordable housing. Once the Town has expended or reserved at least ten percent of the annual funds on each required use category, the Town can choose how to allocate the remaining 70 percent of annual CPA funds among these three purposes and/or recreational purposes. The funds can be allocated towards one purpose, spread among all four, or set aside for future spending. CPA funds can be uses for: site surveys, environmental assessments, historic or housing consultants, architectural and engineering fees, permit processing fees, construction consultants, financing consultants, legal and accounting fees, and similar costs associated with and incidental to the development of a CPA project. The discretionary feature of the CPA allows the Town to select and fund projects that address the future needs of the community.

Funding for recreational purposes is limited to the "acquisition, preservation, and creation of land for recreational use."[55] Recreational use is defined as "active or passive recreational use" and includes the creation of bicycle paths. Acquisition is defined as obtaining "by gift, purchase, devise, grant, rental, rental purchase, lease or otherwise." FST contacted the Community Preservation Coalition regarding the legality of using CPA funds to create a bicycle path on property licensed from the EOTC on a year-to-year basis. The Community Preservation Coalition is a coalition of non-profit organizations that work in the three CPA areas. Although the Coalition is not a state agency, they work closely with the Executive Office of Environmental Affairs (EOEA) and Department of Revenue (DOR). The Coalition referred FST's question to their Counsel who deals with the legal interpretation of the CPA.

Based on the CPA statute, DOR's guidance, previous case law, and what other communities are doing, it is the Community Preservation Coalition's opinion that the creation of a bicycle path through a license agreement with the EOTC would meet the CPA criteria for use of the 70% discretionary funding for recreational purposes. Section 12(a) of the CPA requires that a permanent deed restriction accompany the acquisition of any real property under the CPA. While there is generally not a strict definition of when such an expenditure constitutes a real property interest, it is commonly accepted to be in cases when the purchase or lease extends at least thirty years. Because the license between the Town and EOTC would only be for a one-year term, the license would not constitute a real property interest that would trigger the requirement for a permanent deed restriction under the Act. However, as a practical matter, it is generally not a good idea for a community to invest public funds in a capital asset that it will have no guaranty of control over beyond a one-year period. The issue then becomes more of a policy decision for communities than a

legal issue. The expenditure could be justifiable given that, through conversations with the EOTC, the Town is in a position to say that it is highly unlikely the public's investment would be lost in the near future. However, it is still recommended that the Town of Acton consult with their Town Counsel as well as the DOR, which has sole regulatory authority over the CPA before the expenditure of any CPA funds.[56]

Further, under Section 14 of MGL Chapter 44B, funds in the Town's Community Preservation Fund may be used as the local share for a state or federal grant upon recommendation of the local Community Preservation Committee and acceptance by the local legislative body.[57] The Town should first verify that the policy of the respective grant agency permits use of CPA funds for a local match. Once confirmed, the local Community Preservation Committee would make a recommendation that the funds are used as the local match. The recommendation would then go before the Board of Selectman for approval.[58] It should also be noted that CPA funds cannot be used to cover property maintenance costs that would normally come out of an operating budget.[59]

4.2.4 Private Sources

There are also a multitude of philanthropic sources, non-profit organiztions, and corporations whose mission may align with the goal of developing a bicycle path on a local and regional level. Donations from formalized private programs are highly sought after and are therefore quite competitive.

Robert Wood Johnson Foundation

The Robert Wood Johnson Foundation, established by Robert Wood Johnson of Johnson & Johnson, is one of the world's largest private philanthropies. The Foundation provides grants to selected projects that help advance the Foundation's mission to improve the health of all Americans. The Foundation provides grants under their competitive national programs and also on an ad-hoc basis, with preference given to not-for-profit institutions and public agencies. Most recently, through the Active Living By Design program, the Foundation solicited proposals for projects focused on changes in local community design, transportation, and architecture that make it easy for people to be physically active. An example project could have been the development of a bicycle path as part of an overall community program to increase access and opportunities for people to lead active lifestyles.[60]

Bikes Belong Coalition

Bikes Belong Coalition is a non-profit organization sponsored by members of the American Bicycle Industry. Bikes Belong provides competitive national grants for projects that will "put more people on bicycles more often." The Coalition accepts requests for funding up to $10,000 for facility, capacity, and education projects. They will not consider projects in which Bikes Belong is the sole funder but will consider proposals where they are initial funder and the project sponsor is looking to leverage the money for other funding programs. Most recently, the Bikes Belong Coalition awarded a $10,000 grant to the Friends of the Community Paths for the Somerville

Community Path. The Somerville Community Path is proposed to extend the popular Minuteman Commuter Bikeway, through Somerville, to downtown Boston. The grant will serve as a match towards funding from the Federal CMAQ program.[61]

In addition to philanthropic foundations, many private sources have financial resources that that they contribute as part of a community outreach program. Some developers or private companies building or relocating to a community are willing to make a cash contribution to a specific community project or activity. For example, Intel Corporation of Hudson, Massachusetts donated funds and assistance, in the form of volunteers, to the Assabet River Rail Trail project through their "Intel in the Community" program.[62] Attracting funding from private sources will require a comprehensive search and marketing effort on behalf of the Town or bicycle path supporters.

4.3 Project Schedule

The Town should begin to evaluate its municipal finances over the coming years to assess its ability to provide matching funds for federal and non-federal aid programs. As noted above, the next step for the Town of Acton is to initiate correspondence with the MAPC and the MassHighway District 3 Highway Director to ensure that the project is a candidate for inclusion on an upcoming TIP. The agencies will identify the types of funding to be sought after for project implementation and steer the project into particular channels in the planning process. The Town should also submit an Application for Funding to the MAPC to be considered for Transportation Enhancement funds. MassHighway's "Project Implementation Guide" for the Transportation Enhancement Program is included in Appendix E. Once the MAPC has reviewed the project application for eligibility and preparedness for implementation, the application will be forwarded to MassHighway and the State Transportation Enhancement Steering Committee. The decision to recommend a project for funding is made on a case by case basis, at the discretion of MassHighway and the Steering Committee. The decision is usually made on the size, complexity, and cost of the proposed project. It is impossible to set a timetable on a project until it has been reviewed by all the appropriate entities and programmed as part of the TIP. Based on a number of projects constructed in the past several years, FST estimates that it will take approximately five years from the beginning of the application process to the construction of the bicycle path.

4.4 Project Maintenance Responsibilities

Pending approval from the EOTC, the Town of Acton would be granted a license agreement to design, construct, and maintain the bicycle path.[63] Hence, the annual maintenance and policing costs would be the responsibility of the Town. Prior to path construction, it is important for the Town to evaluate its ability to incorporate the required maintenance and policing activities and related costs into existing programs and budgets.

Conversations with the DCR revealed that the maintenance costs for existing bicycle paths maintained by DCR are absorbed into park maintenance budgets rather than remaining as a separate line item.[64] Consequently, the DCR did not have any in-house budgetary estimates or

studies that could be used to estimate maintenance costs on a per mile basis. The DCR recommended that FST draw upon statistics from other local towns to estimate an annual bicycle path maintenance cost for the Acton portion of the Bruce Freeman Bicycle Path. However, available estimates included in other studies were for heavily used paths such as the Minuteman Commuter Bikeway or the East Bay Bike Path in Rhode Island, which require more maintenance than would be required for the bicycle path within Acton. Use of these estimates would not provide the Town with a realistic assessment of anticipated costs. FST also contacted the Northern Middlesex Council of Governments (NMCOG) to inquire about pre-construction maintenance estimates for the northern section of the Bruce Freeman Bicycle Path.[65] NMCOG is the regional planning agency for the Greater Lowell region that includes the towns of Lowell, Chelmsford, and Westford. Under the MOU with the EOTC, the towns will be responsible for maintaining and policing the bicycle path once construction is complete. NMCOG indicated that bicycle path maintenance costs were not estimated as part of the planning process. The Towns have indicated their intent to include the maintenance and policing responsibilities as part of existing departmental programs.

Under the license agreement with the EOTC, the Town of Acton will assume responsibility for the routine policing and maintenance of the bicycle path. Routine maintenance typically involves mowing, occasional sweeping and brush trimming, seasonal maintenance, and trash collection. The design of the path should take into account machine capabilities in an effort to prevent the Town from having to purchase any new equipment for the purposes of maintaining the bicycle path. High quality materials should be used during construction to help the path endure over time with a minimum of maintenance. Further, good bicycle path maintenance will help prolong the life of the path surface. The Town will also be responsible for policing and providing fire and emergency rescue services along path. Many local police departments already have a bicycle patrol and can incorporate the new facility into their regular patrol route. The design of the bicycle path and bridges will need to accommodate access by the emergency vehicles.

The Town should consider enlisting the support of nonprofit bicycle path, youth, and other citizen groups to assist in path maintenance activities. The Town could also help offset the cost of maintenance through contributions or an adopt-a-trail program aimed at local businesses and residents. Such activities will help offset annual fiscal maintenance expenditures while also serving to increase community awareness and involvement.

4.5 Public Support

There are two local groups who have formally indicated their support for the trail project. The Friends of the Bruce Freeman Rail Trail and Acton Stream Teams have forwarded letters of project endorsement to the Town, as included in Appendix F.

The Friends of the Bruce Freeman Rail Trail is a citizens action group formed in late 2002 that is dedicated to the advancement of the rail trail. There are chapters set up in each town along the railroad corridor: Acton, Concord, Sudbury, and Framingham with about 50 members in total. The Acton group has been actively gaining local support for the project through monthly meetings, a booth at Acton's "Earth Day" event, and their efforts to have the rail trail included

at the planning documents for the Concord Rotary Improvement Project. Representatives from the Acton and Concord chapters have been in contact with the Town, EOTC, and FST throughout the preparation of the feasibility study. The group has endorsed their willingness to assist the Town in their public outreach, document review, and maintenance activities as the project moves from the feasibility study stage to design and construction.

The Acton Stream Teams is a volunteer group formed in 1998 whose mission is "…to reduce sources of pollution and excessive nutrients to Acton waterways, and to raise awareness of the wildlife habitat and recreational opportunities provided by Acton's streams." The group has been interested in the conversion of the rail corridor to a bicycle path, as evidenced by their work along Nashoba Brook. In the Fall of 2000, under the guidance and financial support of the EOTC, Clean Harbors employees removed approximately 22 lead acid and two dozen nickel-cadmium batteries along the entire length of the railroad corridor. This effort was undertaken as a result of the outreach efforts of Acton Stream Teams volunteers. The group has indicated that they are supportive of a bicycle path design that enhances and protects Nashoba Brook and the surrounding resource areas.

There are likely other volunteer or nonprofit groups as well as individual citizens who would volunteer their time and resources towards development of the bike path. It will be important for the Town to identify and contact these groups and individuals to update them on the progress of the project and look for ways for them to involve them during the next phases of the project.

4.6 Strategic Planning Issues

With regard to the next course of action, it is recommended that the Town address a number of strategic planning issues as they seek to advance the bicycle path project from the study phase to design and construction.

The Town should work with the EOTC, MassHighway, and MAPC to maximize the Bruce Freeman Bicycle Path project's eligibility for federal funding. Together, these entities can determine which type of property agreement will permit the project to meet the funding eligibility guidelines of FHWA administered programs, namely the Transportation Enhancement Program, Congestion Mitigation and Air Quality Improvement Program (CMAQ), and Recreational Trails Program. Being eligible for federal-aid programs will increase the number of funding options available to the Town as they seek to advance the project.

When discussing the structure of a property agreement for the railroad right-of-way, the Town may also want to approach the EOTC about the possibility of drafting a tri-community property agreement for the section of railroad corridor through Acton, Concord, and South Sudbury. As the section of path between Lowell and Westford is set for construction in 2004, an agreement for the remainder of the right-of-way would help facilitate the future construction of the entire Bruce Freeman Bicycle Path between Lowell and South Sudbury. Completion of the entire bicycle path would fulfill transportation and recreational objectives at the local and

regional levels. A tri-community agreement matched with a commitment to the project on behalf of each Town would likely improve the project's position to receive federal funding.

At the same time, the Town should work with the EOTC in resolving the encroachments identified along the right-of-way that have occurred without prior EOTC approval. Resolving these encroachments would require the person / business occupying the property to either enter into an agreement with the EOTC for their use of the property, or vacate the property (remove the encroachment). The EOTC has been informed of the current encroachments that exist along the corridor and they have indicated their interest in beginning to resolve these encroachments.[66] Beginning this legal process early in the project planning stages will help prevent the project from being delayed as a result of negotiations. The Town could also discuss their interest in accessing the right-of-way to allow Town employees to perform vegetative clearing and grubbing operations in advance of having a surveyor prepare topographic survey plans of the corridor.

It is suggested that the Town contact MassHighway District 3 to discuss some of the design oriented issues inherent to the project corridor. First and foremost, the Town should begin discussions with MassHighway about providing a bicycle path crossing at Great Road (Route 2A/119). MassHighway has recently rejected several crossing permits proposed along Route 2A. FST recommends that the Town first apply for a crosswalk permit from MassHighway and then revisit the need to install a signal at this location once the bicycle path has been constructed. As previously discussed, there are a number of operational and safety concerns that build a strong case for a crosswalk at this particular location. The Town should begin working with MassHighway to determine the likelihood of being granted a crosswalk permit and discuss any alternative treatments for this particular crossing. Similarly, the Town should continue to emphasize to MassHighway the importance of providing a bicycle path crossing at Route 2 as part of the Concord Rotary Improvement Project. Although the crossing actually occurs within the Concord town limits, the proposed treatments at this particular crossing may involve alternative alignments through Acton. The Friends of the Bruce Freeman Rail Trail have been proactive in contacting MassHighway to ensure that the bicycle path route was included in the scoping documents for the next phase of the project. Lastly, the Town may also want to consider discussing any additional pedestrian and bicyclist improvements that may be desired and/or needed to safely connect the bicycle path to East Acton Village.

The Town should begin identifying sources of funding that could also help finance the project. It will be important for the Town to assess its ability to commit resources and capital towards the planning, design, construction, and operation stages of the project. Obviously, the amount of Town funds involved will depend upon which type of funding is sought for project implementation. It is recommended that the Town review the Transportation Enhancements Program (TEP) guidelines included as an Appendix to this study and consult with the MAPC Transportation Enhancement Coordinator. The Coordinator will help the Town assess its state of project commitment and overall readiness prior to actually applying for funds through the two-step pre-application / final application process. Although the TEP is the most widely sought funding source for bicycle path projects, the Town should not rule out other transportation and recreation focused programs.

The Town should take a leadership role in launching a community-wide marketing and promotional campaign to gain solid support and resources, both human and capital, for the Acton portion of the Bruce Freeman Bicycle Path. The Friends of the Bruce Freeman Rail Trail and Acton Stream Teams have endorsed their support for the project and shown their willingness to conduct cleanup and public outreach activities on behalf of their groups. The Town should build upon the efforts of these groups and identify others who would like to help advance the project through the design and construction stages.

It will be critical that Board of Selectman and department employees remain actively involved and up-to-date on cross departmental issues that may affect the project. Together they will need to establish a realistic timeframe over which to advance the project and assign responsibilities and resources to carry out the necessary tasks. All of these factors are critical to the successful implementation and long-term sustainability of the bicycle path.

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LIST OF ACRONYMS

The following is a list of acronyms used throughout the text:

A	Acre
ADA	American with Disabilities Act
ADAAG	American with Disabilities Act Accessibility Guidelines
ARRT	Assabet River Rail Trail
AUL	Activity & Use Limitation
BLSF	Bordering Land Subject to Flooding
BMPs	Best Management Practices
CE	Categorical Exclusion Checklist
CMAQ	Congestion Mitigation and Air Quality Improvement Program
CPA	Community Preservation Act
CTPS	Central Transportation Planning Staff
CY	Cubic Yard
DCAM	Commonwealth of Massachusetts Division of Capital Asset Management
DCR	Commonwealth of Massachusetts Department of Conservation and Recreation
DEM	Commonwealth of Massachusetts Department of Environmental Management
DOR	Commonwealth of Massachusetts Department of Revenue
DTM	Digital Terrain Modeling
EAV	East Acton Village
EAVPV	East Acton Village Planning Committee
EDR	Environmental Data Resources, Inc.
EIR	Environmental Impact Report
ENF	Environmental Notification Form
EOEA	Massachusetts Executive Office of Environmental Affairs
EOTC	Commonwealth of Massachusetts Executive Office of Transportation and Construction
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
F&L	Framingham and Lowell
FST	Fay, Spofford & Thorndike
FTA	Federal Transit Administration
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
LF	Linear Foot

LS	Lump Sum
LSP	Licensed Site Professional
LSPNFA	Licensed Site Professional No Further Acton
LUST	Leaking Underground Storage Tank
MA DEP	Massachusetts Department of Environmental Protection
MAPC	Metropolitan Area Planning Council
MBTA	Massachusetts Bay Transportation Authority
MDI	Dept. of Housing and Community Development's Massachusetts Downtown Initiative
MGL	Massachusetts General Laws
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MS4s	Municipal Separate Storm Sewer Systems
MUTCD	Manual on Uniform Traffic Control Devices
NA&B	Nashua, Acton & Boston Railroad
NAD 83	North American Datum of 1983
NARA	North Acton Recreation Area
NAVD 88	North American Vertical Datum of 1988
NEPA	National Environmental Policy Act
NFA	Non-Federal Aid project
NMAC	Northern Middlesex Area Commission
NMCOG	Northern Middlesex Council of Governments
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
PRC	MassHighway Department's Project Review Committee
RAO	Response Action Outcome Statement
REMOPS	Remedy Operation Status
SAFETEA	Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003
SHWS	State Hazardous Waste Sites
STIP	State Transportation Improvement Program
SuAsCo	Sudbury-Assabet-Concord Watershed
SWPPP	Stormwater Pollution Prevention Plan
TEA-21	Transportation Equity Act for the 21st Century
TIP	Transportation Improvement Program
TPPC	Transportation Planning and Programming Committee of the Boston MPO
WCSPRM	Waiver Completion Statement has been submitted

APPENDIX A:

Public Meeting Minutes

Public Meeting Minutes

The public meeting for the Acton Rail Trail, recently renamed the Acton portion of the Bruce N. Freeman Memorial Bicycle Path, was held at the Acton Town Hall on Wednesday, February 26, 2003 at 7pm. The following were in attendance:

Rail Trail Committee:
Tom Tidman, Natural Resources Director
Dean Charter, Municipal Properties Director
David Abbt, Engineering Administrator
Nancy McShea, Recreation Director
John Hendrickson, FST
Jennifer Shemowat, FST

Attendees:
Pia Finneran, Acton Resident
Carol Holley, Acton Resident
Betsy Comstock, Acton Resident
Jim Synder-Gut, Acton Resident
Mary Utt, Acton Resident
Tom Michelman, Acton Resident/Friends of the Bruce Freeman Rail Trail
Mary Michelman, Acton Resident
Alison Gallagher, Acton Resident
Charles Martin, Concord Resident/Friends of the Bruce Freeman Rail Trail

---

Tom Tidman welcomed the audience members and started the meeting with an overview of the process by which the Town has come to this point. The funds for the feasibility study were appropriated at Acton's Annual Town Meeting in April 2000 in response to the strong interest of the residents and municipal officials to construct a multi-use trail. The Town then formed a Rail Trail Committee comprised of employees from various Town departments. Tom introduced the other members of the Rail Trail Committee who were present at the meeting. The Town solicited proposals from qualified engineering firms to prepare the feasibility study in January 2002. The Town conducted a proposal review process which resulted in the selection of the consultant firm of Fay, Spofford, & Thorndike, LLC (FST) of Burlington, Massachusetts.

John Hendickson gave a brief overview of FST's experience designing multi-use trails. Jennifer Shemowat then gave a detailed PowerPoint presentation on the results of the feasibility study. A number of questions were asked both during and following the presentation. The following questions summarize the public meeting:

- *An attendee asked about the possibility of constructing a bridge over Route 2A instead of providing an at-grade crossing.* FST explained that bridge construction at this location would result in additional financial and environmental impacts. FST stated that they recently designed two rail trail bridges along the Cape Cod Rail Trail. The combined cost for these two bridges was approximately $2 million. In order to provide the required bridge clearance for vehicles along Route 2A, retaining walls would need to be constructed north and south of the crossing to bring trail users over the bridge. Construction of the bridge structure would likely have severe environmental impacts due to the corridor's proximity to Nashoba Brook

and its floodplain. Further, FST noted the aesthetic impact of providing a bridge at this location.

- *An attendee questioned the value of the scrap metal that could result from rail removal.* FST stated that that value of scrap metal is so low that it would not help offset the cost of removing the tracks and ties.

- *An attendee noted that the speed limit sign on Concord Road near the proposed rail trail crossing was missing.* FST noted that the sign was there back in January. The Committee made note of the attendee's observation.

- *An attendee asked for clarification on FST's recommendation to remove the existing bridges.* FST explained that there is insufficient lateral distance on the existing bridge abutments to construct a pre-engineered bridge adjacent to the existing bridge structure. It was noted that the cost of rehabilitating the existing bridge structure, including lead paint removal, is actually higher than removing the existing bridge structure and constructing a new pre-engineered bridge.

- *The audience asked if FST considered any rail trail surface materials other than bituminous concrete.* FST explained that MassHighway typically only funds rail trails with a bituminous concrete surface. FST did note that MassHighway has recently decided to conduct a pilot project to assess other types of rail trail surface materials. However, to-date, FST has not seen MassHighway fund any rail trails other than those with bituminous concrete surfaces. FST stated that a bituminous concrete surface has a much longer lifetime than other materials such as stone dust. The Cape Cod Rail Trail was cited as an example where it is just now being resurfaced after a lifetime of 20 years. *Audience members from the Friends of the Bruce Freeman Trail stated that Craig Della Penna of the Rails-to-Trails Conservancy was willing to provide information supporting alternative surface materials other than bituminous concrete.* FST stated that choosing an alternative surface material becomes a question of being able to secure funding and gauging the Town's maintenance responsibilities over the lifetime of the rail trail.

- *An attendee questioned if the Town of Acton currently has a bike patrol.* Members of the Committee were unsure but FST agreed to contact the Acton Police Department. Follow up conversations with Lieutenant Don Palma at the Acton Police Department revealed that the Town does have bikes available for police use. However, Lieutenant Palma noted that police bike patrol is not a regularly scheduled assignment and increased bike patrol responsibilities would need to be added into the Department's budget. Alternatively, FST recommended that a volunteer group could be organized to provide citizen watch/patrol services.

- *An attendee asked who would be responsible for dealing with the right-of-way encroachments.* FST stated that the State of Massachusetts Executive Office of Transportation and Construction (EOTC) would be responsible for addressing the right-of-way encroachments. As the owner of the right-of-way, the EOTC would either require the user to vacate the property or request that the owner enter into a legal property agreement for their use of the right-of-way.

- *An attendee asked if the Towns along the proposed rail trail should be working together to move the project forward.* FST stated that working together as the project moves forward

would emphasize the regional focus of the rail trail and better position the project to be included as part of the funding process.

- *An attendee emphasized the need to ensure that that the proposed rail trail is included as part of the planning efforts for Route 2/Concord Rotary Improvements.* Tom Tidman stated that FST had attended a previous meeting of the Route 2 Corridor Advisory Committee (CAC) and made the Committee aware of the plans for a rail trail along the abandoned corridor. The attendee stated that the Friends of the Bruce Freeman Trail are working with the CAC Selectman representatives from Acton and Concord in an effort to make a brief presentation at the next Route 2 CAC meeting.

- *The audience members emphasized their individual support as well as the support of other in-Town committees. An East Acton Village Planning Committee member stated that the Committee saw the future rail trail as a huge asset to the village. A member of the Acton Stream Teams stated that the development of a rail trail along the rail corridor aligns with the clean-up efforts of the Teams.*

- *The audience questioned if there would be connection points between the rail trail and adjacent businesses, neighborhoods, and East Acton Village.* FST agreed that there could potentially be on-road connections to certain destination points depending on the roadway dimensions. Providing connections across private property would depend on the decision of individual property owners. FST noted that conversations regarding on-road and private property connection points would need to occur during the design stages of the project.

- *An attendee questioned the need to increase the proposed width of the rail trail.* FST stated that the rail trail would be a 10-foot wide paved trail with two-foot shoulders. *The attendee stated that Minuteman Bike Trail is 12 feet wide.* FST emphasized that the Minuteman Bike Trail is an urban rail trail and that the Acton Rail Trail would most likely not experience as much usage. FST also noted that the rail trail cross section for the northern segment of the Bruce Freeman Rail Trail is a 10-foot wide paved trail with two-foot shoulders. Further, MassHighway typically calls for the development of 10-foot wide rail trails, except in high usage areas.

- *The audience questioned the benefits to leaving the existing tracks and ties in place.* First, FST stated that leaving the tracks and ties in place would substantially decrease the overall cost of the project (approximately $1 million). Second, FST noted that leaving the tracks and ties in place serves to emphasize the railroad history along the corridor. On a number of rail design projects, FST has been asked to preserve the tracks and ties for just this reason.

- *An attendee highlighted that the proposed rail trail would provide access to the historic Isaac Davis Trail as well as a number of other in-Town locations.*

- *An attendee stated that a traffic light is needed at the new mall (Brookside Village Shops) and she hoped that all the transportation components along Route 2A could work in unity.* David Abbt stated that the Brookside Village Shops owners would need to follow the same process FST described for installing a traffic signal at the Route 2A/rail trail crossing. The Shops owners would need to demonstrate to MassHighway that there is sufficient traffic and pedestrian demand at this location in order to gain the state's approval for installing a traffic light.

- *An attendee asked if FST and/or the Rail Trail Committee considered lighting the rail trail.* Besides the maintenance and cost issues, FST stated that lighting the rail trail would encourage people to travel along the trail at night. This condition would present more safety and trespassing concerns, especially where this rail trail would travel through some densely wooded areas. Therefore, FST recommends not lighting the rail trail.

- *An attendee stated that, as an abutter, she really wants the rail trail as do her neighbors. They enjoy walking along the abandoned railroad corridor and it would be great if it was developed into a rail trail. She supported leaving in the existing tracks and ties as her children and those of her neighbors are curious and explorative along the remains of the railroad. She wished that there was more publicity/advertisement about this public meeting.*

- *An attendee asked what next steps the Town plans to take.* Tom Tidman acknowledged the need to start an in-town committee with public representation to move the project forward. He also stated that the Selectman would need to endorse an extension of the feasibility study to connect to the Town boundaries. There is currently about $5,000 left in the budget item that could potentially be used to fund the next phase of the feasibility study. Extending the study would better position the rail trail to receive transportation funding.

- *The audience asked when copies of the final feasibility study would be available.* Tom Tidman explained that the study was in final draft form and the Town would make copies in-house and make them available for public review when complete.

Respectively Submitted,
Jennifer Shemowat , FST

APPENDIX B:

East Acton Village Green Schematic Plan


NORTH
1"=10'-0"
FUTURE RAIL TRAIL PATH
GREAT POND
KIOSK
EVERGREEN SHRUB MASSING
CLEAR UNDER-STORY
CARVED WOOD ENTRY SIGN WITH STONE BASE
REMOVE SIDEWA
SHRUB SCREEN
STONE BLOCK SEATING
INTERPRETIVE FEATURE
SPECIAL SHRUB PLANTING ON SLOPE
SEASONAL GARDEN
CONCORD ROAD
LOW STONE ELLSWORTH JUNCTION SIGN
HISTORIC STONE MARKER
STONE GATEWAY PIERS
LOW EVERGREEN SHRUB MASSING (RAISED MOUND GRADE)
SPECIAL PAVEMENT
NEW CROSSWALK
ELLSWORTH JUNCTION
ACTON, MA
MASTER PLAN SKETCH
THE CECIL GROUP, INC.

APPENDIX C:

MAPC Funding Memorandum – December 2, 2003

M E M O R A N D U M

TO: Municipal Officials and Other Interested Parties

FROM: Jim Fitzgerald, Transportation Planner

DATE: December 2, 2003

RE: Transportation Enhancement Program 2004 Calendar Year Deadlines

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The Transportation Enhancement Program provides a unique opportunity to preserve, restore, or enhance components of our intermodal transportation system, which are not traditionally funded by the Federal Highway Administration or the Massachusetts Highway Department. Below is a list of eligible project types:

TABLE OF TRANSPORTATION ENHANCEMENT ACTIVITIES
1. Facilities for bicycles and pedestrians
2. Safety and educational programs for pedestrians and bicyclists
3. Acquisition of scenic easements and scenic or historic sites
4. Scenic or historic highway programs
5. Landscaping and other scenic beautification
6. Historic preservation
7. Rehabilitation and operation of historic transportation buildings, structures, or facilities
8. Preservation of abandoned railway corridors
9. Control and removal of outdoor advertising
10. Archeological documentation and research
11. Mitigation of water pollution due to highway runoff or reduction of vehicle-caused wildlife mortality while maintaining habitat connectivity
12. Establishment of Transportation Museums

As indicated in the enclosed program guidelines, all projects must go through a two step pre-application/final application review and approval process. MAPC's Enhancement Committee conducts a regional review of applications, prior to the State Steering Committee's review of all applications received throughout the state. The following application deadlines have been established for the 2004 calendar year:

Applications **due at MAPC** for Regional Review	
1st quarter:	Wednesday 2/4/04
2nd quarter:	Wednesday 5/5/04
3rd quarter:	Wednesday 8/4/04
4th quarter:	Wednesday 11/3/04

MassHighway has made only administrative changes to the guidelines this year. A Microsoft Word version of these guidelines will be made available shortly on MassHighway's web site at the following address (currently the 2001 edition of the guidelines is available).

If at the time you need this electronic version of the application, and it is not yet available on MassHighway's website, please contact me and I can e-mail it to you.

http://www.state.ma.us/mhd/publications/other.htm

For additional further reference, the Federal Highway Administration's "Final Guidance on Transportation Enhancement Activities" (23 U.S.C. and TEA-21) can be accessed via the web address listed below:

http://www.fhwa.dot.gov/environment/te_final.htm

Applicants will need to submit Ten (10) copies of each pre-application, and any supporting material, for purposes of the regional review process. If an application is approved and forwarded to the state, we may need to request up to an additional fourteen (14) copies at that time.

If you have any questions or would like to discuss potential projects, I can be reached at (617) 451-2770 x2057 or jfitzgerald@mapc.org.

APPENDIX D:

Commonwealth of Massachusetts
Transportation Enhancement Program Guidelines

COMMONWEALTH OF MASSACHUSETTS

TRANSPORTATION ENHANCEMENT PROGRAM

GUIDELINES

Mitt Romney
Governor

Kerry Healey
Lieutenant Governor

Daniel A. Grabauskas
Secretary of Transportation

John Cogliano
Commissioner
Massachusetts Highway Department

Massachusetts Highway Department
10 Park Plaza
Boston, Massachusetts 02116

November 2003

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SECTION 1
INTRODUCTION

The Intermodal Surface Transportation Efficiency Act created the Transportation Enhancement Program. In May 1998, the Intermodal Surface Transportation Efficiency Act was superseded by the Transportation Equity Act for the 21st Century, commonly known as TEA-21. Like the Intermodal Surface Transportation Efficiency Act legislation, TEA-21 authorizes Transportation Enhancement funds for public agencies, authorities and commissions to preserve, restore, or enhance those components of the multi-modal transportation system that have not traditionally been funded by the Federal Highway Administration. These guidelines are intended to help accomplish this purpose and to foster the preparation of well conceived projects.

Transportation Enhancements funds are a means of promoting projects and activities that relate to transportation but go beyond what is considered ordinary environmental mitigation to reduce project impacts. The National Environmental Protection Act requires all federal-aid transportation projects to mitigate their environmental impacts. Mitigation efforts include measures to avoid and minimize impacts. Where impacts are unavoidable, compensatory mitigation is provided. The Transportation Enhancement program was created to expand on this concept. However, Transportation Enhancement projects are not intended to replace mitigation currently eligible or required under regular federal-aid funded projects.

Applicants should consult their Regional Planning Agency prior to commencing project development. Regional Planning Agencies continue to play a significant role in the selection of Transportation Enhancement projects. Both Regional and Statewide Transportation Enhancement proposals must be submitted to the appropriate Regional Planning Agency for review based on eligibility and readiness implementation before a project can be forwarded to the Massachusetts Highway Department (MassHighway) and the State Transportation Enhancement Steering Committee.

MassHighway has provided each Regional Planning Agency with copies of the Transportation Enhancement Program Project Implementation Guide. The Implementation Guide is an information source intended to help applicants and Regional Planning Agencies understand the steps necessary to complete a project. Applicants are encouraged to review the Implementation Guide, especially before construction begins.

MassHighway requires applicants to use a pre-approved MassHighway consultant for project development and design, since those consultants are most familiar with MassHighway's process and standards in the MassHighway Design Manual. Applicants will be required to submit a copy of the consultant's Architects and Engineers Review Board Pre-Qualification letter. Exceptions will be made only if no MassHighway approved consultant has experience or expertise to successfully complete a project.

The Massachusetts Transportation Enhancement Program also provides a separate statewide funding category for projects of statewide significance, or for substantial projects located in more than one region. Statewide projects generally must go through a review process of the appropriate Regional

Planning Agency. If a project impacts multiple cities/towns and regions, the project may be submitted directly to the Transportation Enhancement Program Coordinator at MassHighway and the Transportation Enhancement Steering Committee for review and recommendation.

All projects recommended for funding under the Transportation Enhancement Program by the State Transportation Enhancement Steering Committee are subject to final approval by the Secretary of Transportation. Following the Secretary's approval, each project must meet certain conditions, including the programming of adequate funding for the project by the regional Metropolitan Planning Organization. The Metropolitan Planning Organization must determine that the project is eligible for funding and programming on the regional Transportation Improvement Program in accordance with all MassHighway and Federal Highway Administration requirements.

These guidelines provide guidance on:

- how to determine project eligibility
- how to prepare an application for funding
- the application submission and project selection processes
- project funding and project phasing requirements
- the roles of various agencies

SECTION 2
ELIGIBILITY

2.1 Introduction

This section outlines the criteria for determining whether a proposed project is eligible for Transportation Enhancement funding. Although meeting eligibility requirements does not guarantee that a project will be approved for funding, it does allow the project to compete for available funding. This section also defines who can apply for Transportation Enhancement funds, the types of projects allowed, and the types of work categories the program can fund.

Before a Transportation Enhancement application is submitted to MassHighway for review, the Regional Planning Agency must determine that the project is eligibility for the program as outlined in these guidelines.

2.2 Eligible Applicants

Project applications may only be submitted by a municipality (city or town), public agency, authority, or commission that can assume responsibility for the project through an executed contract or agreement with MassHighway. Throughout these guidelines, the word "applicant" is often used to refer to the municipality, public agency, authority or commission that submits an application.

A project proponent or sponsor that is not, by itself, eligible to receive Transportation Enhancement funding directly (e.g. private non-profit entities or advocacy groups) may prepare the application and/or manage the project for the municipality or other public agency. However, MassHighway will hold the municipality or other public agency accountable for the project's management and completion. This includes Youth Conservation or Service Corps.[1]

Therefore, it is recommended that both the applicant and the proponent work together to prepare the application and/or manage the project. The relationship of the proponent to the municipality or public agency must be described in detail in the application. When the application involves a group of municipalities or organizations, the group must select one municipality or organization to represent it as the lead applicant.

2.3 Eligible Project Types

There are two types of projects eligible to compete for Transportation Enhancement funding: Regional projects and Statewide projects.

---

1 Youth Conservation or Service Corps
TEA-21 requires the U.S. DOT to encourage the use of youth conservation or service corps in the implementation of Transportation Enhancement activities where appropriate TEA-21 Sec. 1108(g). Service corps and youth conservation corps organizations have effectively worked with states, local governments, and communities to assist in Transportation Enhancement projects. Corps organizations often are able to recruit, hire, train, and provide opportunities for economically and/or educationally disadvantaged young people.

2.3.1 Regional Projects

A regional project typically affects one municipality or local area within the jurisdictional boundaries of a single Regional Planning Agency. There may be instances where a regional project could impact two or more municipalities, localities or Regional Planning Agencies. If this occurs, one municipality, locality and/or Regional Planning Agency must take the lead for the project. For example, a multi-regional pedestrian and bicycle facility would be overseen by one of the Regional Planning Agencies and would generally qualify for regional funding, not statewide funding.

2.3.2 Statewide Projects

A statewide project must demonstrate statewide importance or significance. Statewide projects must (1) protect or enhance resources that are located in more than one region; and/or (2) enhance a significant feature, landscape or artifact of statewide importance in one or more than one region. Typically, statewide projects are submitted jointly by all participating parties, with one party as the lead.

2.4 Eligible Work Categories

Four categories of work are eligible for funding under the Transportation Enhancement Program – Programs, Property Acquisition, Final Design and Construction.

General program or project planning activities, such as feasibility studies, planning studies, or master plans that serve to develop program initiatives and concepts are not eligible for Transportation Enhancement funding. Furthermore, the use of Transportation Enhancement funds for the preliminary design phase of a project will not be considered.

The Transportation Enhancement Steering Committee will not separately accept project phases for eligible work categories. For example, a proposal requesting final design, property acquisition and construction funds should be received as one project application in its entirety. (See Section 4.9 Project Phasing.)

2.4.1 Programs

Programs are projects limited to an organized sequence of activities, procedures, or events designed to enhance bicycle or pedestrian safety, or preserve historical or archeological resources.

A proposal in the Program work category must have completed its planning activities and be ready for implementation. The Program category is limited to projects that are educational forums or activities to enhance bicycle or pedestrian safety, or to preserve historical or archeological resources.

2.4.2 Property Acquisition

The primary objective of this work category is the permanent acquisition of property by purchase or easement, which is clearly related to the surface transportation system. Generally, the applicant will need to show that it can actually acquire the property provided funding is available. Any property acquisition that is proposed as part of a project must be related to the project's primary purpose, and it must be necessary for project implementation.

A proposal in the Property Acquisition work category must have its project planning complete, including the identification of the types of property rights sought (for example: fee, temporary easement, permanent easement, etc.) for each property. The application must contain a map and listing of the properties to be affected so the Transportation Enhancement Steering Committee can identify the property in question. Any issues with landowners and/or abutters should be addressed prior to the submission of an application for property acquisition. If a project requires private or public land acquisition, there must be sufficient evidence to support the acquisition by purchase or easement, such as a letter from the landowner(s) or an affidavit from a city or town official.

Any issues with encroachments should be addressed prior to the submission of an application for property acquisition and/or disclosed at the time of application. If there are encroachment(s), the applicant must provide adequate evidence that the encroachment(s) will not interfere with the implementation of the Enhancement project. If the encroachment(s) interferes with the implementation of the Enhancement project, the applicant must resolve the encroachment issue prior to applying for Enhancement funding.

Transportation Enhancement funds may not be used to purchase land that is already in the public realm, including Massachusetts Bay Transportation Authority owned rights-of-way, or for eminent domain actions involving any hostile taking of privately owned property.

The applicant must also identify substantial support for the project and demonstrate a strong likelihood that the acquisition will take place upon final approval and allocation of the funds. Although a public meeting is not required at this time, it is encouraged. Information pertaining to any type of city council vote or municipal referendum or hearing, as well as any opposition to the project, is important to disclose in the application.

An applicant for property acquisition must also follow the MassHighway right-of-way process explained in Section 4.4 of the Transportation Enhancement Implementation Guide and ensure compliance with Title 42 USC, §4601, et. seq., under the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act.

2.4.2.1 Property Acquisition for Preservation projects

At the time of application for a property acquisition for a preservation project, the applicant must identify the parcels of land necessary to complete the property acquisition, and convince MassHighway and the Transportation Enhancement Steering Committee that the property acquisition is necessary for the preservation project. The project must be clearly related to the surface transportation system.

2.4.2.2 Property Acquisition (for proposed Enhancement construction projects)

The primary objective of this work category is the permanent acquisition of property, by purchase or easement, necessary to complete the proposed Enhancement construction project. Any property acquisition for a construction project must be necessary for project implementation.

Once the construction project is scheduled to begin, all property within the project limits must be acquired and documented. In the case of Massachusetts Bay Transportation Authority owned rights-of-way, a letter from the Massachusetts Bay Transportation Authority's Real Estate department authorizing access over the right-of-way is necessary.

2.4.3 Final Design

Final Design projects are intended to complete the final design of an eligible Transportation Enhancement project. A proposal in the Final Design work category must have its project-planning phase and any necessary feasibility studies complete. MassHighway requires that applicants use a pre-approved MassHighway consultant for project development and design. Applicants will be required to submit a copy of the consultant's Architects and Engineers Review Board Pre-Qualification letter. Each consultant must be approved for the project's required disciplines. Contact the Secretary of the Architects and Engineers (A&E) Board for information regarding disciplines and pre-qualifications. (See Appendix D.)

At the time of application for final design, the applicant shall have completed or substantially completed the 25% design phase; or the applicant shall commit in writing to fund the project development and 25% design phase pursuant to MassHighway design standards.[2]

After the proposed project is approved and the 25% design is complete, the applicant must contact the District office about submitting a Project Review Committee (PRC) request. After this request has been submitted along with the 25% design, a project manager for MassHighway will be assigned. Several copies of the design plans will need to be submitted, and the project manager will begin the 25% design review. (See MassHighway's Design Manual and Project Implementation Guide for more information regarding the Design process.)

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2 The MassHighway Design Process contains several phases with which applicants should become familiar. For the purposes of developing a Transportation Enhancement proposal, it is critical to have an understanding of the three phases described below. For more information regarding the MassHighway design process, refer to the MassHighway's Highway Design Manual, 1997 Edition; or contact the appropriate MassHighway District Office.

Project Development and the 25% Design Phase: This is the design phase where basic design parameters are established, and public concerns and environmental impacts are identified. This phase may include, but is not limited to: performing geodetic surveying to establish the limits of work; identifying and mapping site features and environmentally sensitive areas; drafting preliminary grading plans; determining applicability of federal, state and local environmental laws and regulations; filing an Environmental Notification Form where applicable; and beginning interagency cooperation, where appropriate.

75% Design Phase: This phase builds upon the preliminary information provided by the 25% Design Phase. More detailed plans and specifications are developed during this phase. Any required permits or clearances needed to implement the project are typically initiated during this phase.

100% Design Phase: This is the final design phase where plans, specifications, cost estimates, utility agreements, traffic management plans, and other design elements are finalized. All environmental and other permits should have been obtained, with plans revised to comply with permit requirements, if necessary.

MassHighway will not authorize starting the final (75%) design phase unless any right-of-way or property acquisitions are resolved and under the control of the applicant. Any known opposition to the project should have been disclosed and resolved during the 25% design phase. A public hearing, city council or town vote, and/or municipal referendum or hearing shall be conducted during the preliminary (25%) design phase.

2.4.4 Construction

A proposal in the Construction work category must have completed its planning activities, feasibility studies, property acquisitions, and design before implementation can begin. Permitting and design issues must be complete prior to the start of construction. Construction projects are those projects that are ready to be built.

Approved construction projects are those whose design has been done by a MassHighway approved design consultant, has gone through the 25%, 75%, 100% design reviews, and Planning, Specification and Estimate reviews (see MassHighway's Design Manual for more information regarding the Design process), and has been deemed ready for construction. All required permits should have been obtained; and the right-of-way, if any, shall be under the control of the applicant. Construction projects cannot begin until the design is complete. Therefore, the programming of funding for the construction should appear in the appropriate year of the Transportation Improvement Program.

Any property acquisition that is proposed as part of a construction project must be related to the project's primary purpose, and it must be necessary for project implementation. Any property acquisitions should be under the control of the applicant before construction can begin. A public hearing, city council or town vote, municipal referendum or hearing should have been conducted by this time. Any known opposition to the project should have been disclosed and adequately resolved before construction can begin.

Improvements to private property or commercial facilities are eligible for funding only if they are, at the sole discretion of MassHighway, necessary to mitigate the impacts of construction of a Transportation Enhancement project.

A visitor or welcome center, generally, should be publicly owned and open to the public. Proposals for privately owned facilities to be used for a welcome or tourist center, and leased to a public entity, will be reviewed on a case-by-case basis by both MassHighway and the Federal Highway Administration. (See Activity 4)

2.5 Project Eligibility Criteria

In addition to all other program requirements outlined in these guidelines, each Transportation Enhancement proposal submitted for review must meet Eligibility Criteria 1 through 3 as listed below to receive further consideration for funding. In addition to meeting Eligibility Criteria 1 through 3, proposals submitted as "Statewide" projects must meet the requirements in Section 2.3.2 for Statewide funding.

2.5.1 Eligibility Criterion 1: Relationship to Surface Transportation System

Transportation Enhancement activities must relate to surface transportation. Each proposed project must demonstrate a substantial relationship to the surface transportation system either by function, proximity or impact. The only exception is for Historic Preservation Projects. Historic Preservation projects are not eligible for Transportation Enhancement funding if linked to the surface transportation system by proximity alone. These projects must also be linked by impact and/or function.

Function – The project must serve, or have served, as a functional component of the intermodal surface transportation system.

Proximity – The project must be contiguous to or clearly visible from a publicly accessible transportation facility. If the relationship to the transportation system is solely by proximity the proposed activity must significantly enhance the surface transportation system.

Impact – The project must have a significant beneficial impact on the surface transportation system.

The nature of a proposed Transportation Enhancement project's relationship to surface transportation should be discussed in the project proposal. Surface transportation means all elements of the intermodal transportation system, exclusive of aviation. For the purpose of Transportation Enhancements eligibility, surface transportation includes water as well as land transportation, and it includes as eligible activities related features such as canals, lighthouses, and docks or piers connecting to ferry operations, provided the proposed Transportation Enhancement otherwise meets the basic eligibility criteria.

2.5.2 Eligibility Criterion 2: Non-Traditional Transportation Project

A fundamental purpose of the Transportation Enhancement Program is to provide funding for transportation-related projects that are not typically eligible for funding under more traditional transportation funding programs. Activities that are commonly performed or funded as routine design, construction, replacement, maintenance or ordinary environmental mitigation to reduce project impacts are not eligible for funding as a Transportation Enhancement activity. Generally, this is decided on a case-by-case basis.

Activities not eligible for Transportation Enhancement funds include, but are not limited to: ordinary sidewalks, sidewalk repair or replacement, sidewalk modifications to comply with American with Disabilities Act requirements, roadway resurfacing/widening, parking lots, upgrading of substandard highway elements (signs, guardrail, wheelchair ramps, etc.), wetland replication (1:1), or compensatory flood storage.

2.5.3 Eligibility Criterion 3: Includes a Transportation Enhancement Activity

The principal purpose of the proposed project must include at least one eligible project activity as listed on the Transportation Enhancement Activities table.

TABLE OF TRANSPORTATION ENHANCEMENT ACTIVITIES
1. Provision of facilities for pedestrians and bicycles
2. Provision of safety and educational activities for pedestrians and bicyclists
3. Acquisition of scenic easements and scenic or historic sites
4. Scenic or historic highway programs (including the provision of tourist and welcome center facilities)
5. Landscaping and other scenic beautification
6. Historic preservation
7. Rehabilitation and operation of historic transportation buildings, structures, or facilities (including historic railroad facilities and canals)
8. Preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian or bicycle trails)
9. Control and removal of outdoor advertising
10. Archeological documentation and research
11. Environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity
12. Establishment of transportation museums

A more detailed explanation of each activity including any applicable exceptions or special requirements follows:

Activity 1. Provision of facilities for pedestrians and bicycles

Except as provided in Section 2.5.2, this activity may either create new linkages for pedestrians and bicycles in the transportation system or improve existing facilities. Eligible projects include pedestrian and bicycle paths and roadway improvements to accommodate bicycles and related facilities. Routine maintenance of pedestrian and bicycle facilities is not eligible for Transportation Enhancement funding.

Projects whose purpose is to retrofit an existing facility solely for American with Disabilities Act conformance are not eligible to receive Transportation Enhancement funding. Each project must be consistent with the goals and objectives of the applicable Regional Transportation Plan endorsed by the Metropolitan Planning Organization at each Regional Planning Agency.

Any project submitted under this activity must comply with the requirements of the Americans with Disabilities Act, and the requirements of the Architectural Access Board, where applicable.

Proposed projects or programs must be consistent with the safety and educational objectives of the most recently approved *Massachusetts Pedestrian Transportation Plan*, or *Massachusetts Statewide Bicycle Transportation Plan*.

Activity 2. Provision of safety and educational activities for pedestrians and bicyclists

This activity includes non-construction safety-related activities such as bicycle and pedestrian safety training, cost of facilitators and classes. This activity may also include related training materials such as brochures, videotapes, and other training aids. Staff salaries will only be paid if the staff person was hired for the sole purpose of this program. For example, a summer intern or a part-time employee could be eligible, but a full-time staff person would most likely not be eligible. MassHighway reserves the right to make this decision on a case-by-case basis. Each proposal should reflect a definitive period for participation.

The Transportation Enhancement funded activities must be available to the general public or targeted to a broad segment of the general public. Project sponsors are encouraged to integrate safety messages and education opportunities for bicyclists and pedestrians into Transportation Enhancement projects through the development of campaigns, programs, education materials including maps and brochures, and pedestrian and bicycle enforcement activities. Project sponsors are also encouraged to coordinate these activities with the National Highway Traffic Safety Administration and the Governor's Highway Safety Bureau. This activity is not intended to replace or duplicate existing Section 402 funding opportunities for bicycle and pedestrian activities currently available throughout the state.

Proposed projects or programs must be consistent with the safety and educational objectives of the most recently approved *Massachusetts Pedestrian Transportation Plan*, or *Massachusetts Statewide Bicycle Transportation Plan*.

Activity 3. Acquisition of scenic easements and scenic or historic sites

This activity includes projects that enhance the transportation experience or are a significant part of a transportation corridor's view shed. Typically, these projects propose to purchase, accept donations of, transfer, or trade lands that in their current form possess significant aesthetic, cultural, historic, natural, visual or open space values.

At the time of application for Transportation Enhancement funds, an applicant must provide suitable verification that the property has been tested for, and does not contain, hazardous materials. Costs associated with appraisals, 21E site assessments, surveys, title searches, legal fees or other incidental purchase costs are not eligible for funding.

The property acquired must have a preservation covenant in accordance with Massachusetts General Laws, Chapter 184, Section 32 attached to the deed of the property to ensure that future activities on the property will respect the scenic or historic integrity of the property. Land acquired for its scenic and historic qualities must be maintained for these qualities and may not be developed or used in a manner that degrades the scenic character and quality of the site. The project sponsor must agree to enforce mechanisms to preserve the historic or scenic values of the property.

In general, public access should be provided to all acquired property. However, in cases where public access may not be appropriate, due to the nature of the property or its preservation restrictions,

it is not required. Special circumstances must be clearly explained in the project application, along with appropriate documentation and justification.

Activity 4. Scenic or historic highway programs (including the provision of tourist and welcome center facilities)

This activity includes projects that protect and enhance federal or state designated scenic highways or byways, and federal or state designated historic highways. Highways that are eligible to be designated as historic may be included in a project. Funds may be used to protect or enhance the scenic and historic integrity and visitor appreciation of the highway and adjacent area, including tourist or welcome centers. Funding may be used for projects that will enhance the scenic, historic, cultural, natural and archeological features of an existing highway and adjacent area, as well as traveler appreciation of these features.

Congress provided additional language to assist in the interpretation of its intent regarding tourist and welcome centers. The conference report language notes:

> *"…In order to be eligible under the Transportation Enhancement program, the tourist or welcome center (whether a new facility or existing facility) does not have to be on a designated scenic or historic byway, but there must be a clear link to scenic or historic sites."*

The eligibility for tourist and welcome centers includes necessary related construction actions to provide the facility, such as interior fixtures and parking areas. Transportation Enhancement funds may be used to purchase and install items that support or interpret the scenic or historic highway program or site. Transportation Enhancement funds may not be used for staffing, operating costs, or maintenance. Transportation Enhancement funds may not be used to purchase items such as racks for advertising brochures for private businesses.

The intent of this activity is to fund activities clearly linked to scenic or historic programs or sites, not to simply repair or restore what are clearly rest areas.

A tourist and welcome center need not be located immediately adjacent to an existing federal-aid highway. However, if a proposed tourist or welcome center is not linked to such a highway, the proposal must explain its relationship to the surface transportation system. A visitor or welcome center should be publicly owned and open to the public. Proposals for privately owned facilities to be used for a welcome or tourist center, and leased to a public entity, will be considered on a case-by-case basis by MassHighway and the Federal Highway Administration.

Activity 5. Landscaping and other scenic beautification

This activity includes projects that enhance the aesthetic or ecological resources along a transportation corridor, at points of access, and on lands qualifying under other Transportation Enhancement activities. Architectural treatment of transportation structures, including bridges and highways, beyond federal and state design standards, may be considered eligible in this category.

Funding does not cover routine maintenance, soil stabilization, drainage improvements or seeding. A qualified professional, such as a registered landscape architect, must develop the necessary plans. Plans must be submitted to and approved by MassHighway. MassHighway reserves the right to require that changes to the plans.

If proposed projects appear to be primarily park improvements with incidental Transportation Enhancement activities incorporated into the project, only the transportation element will be eligible for funding. Payment to utility companies occupying the public right-of-way, by permit or sufferance, is not eligible for funding.

Activity 6. Historic preservation

This activity includes acquisition, rehabilitation, or restoration of prehistoric or historic sites, districts, buildings, structures or landscapes that are directly related to the surface transportation system by function or impact. A historic preservation project that is linked to the surface transportation system by proximity only is not eligible to receive Transportation Enhancement funding.

Historic, cultural, and archaeological resources that are eligible to be listed, or listed in the National Register of Historic Places or listed in the State Register of Historic Places are eligible for Transportation Enhancement funding.

The State Register of Historic Places includes properties listed in or determined eligible for listing in the National Register of Historic Places by the Secretary of the Interior; properties within local historic districts; local, state, and national landmarks; state archaeological landmarks; and properties with preservation restrictions. All work must be done in compliance with the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation and Standards for Treatment of Historic Properties*. The historic preservation work must be carried out under the direction of professionals meeting the standards published in the Code of Federal Regulations, (36 CFR, Part 61).

Transportation Enhancement projects that include Native American sites must provide evidence through the Massachusetts Commission on Indian Affairs that appropriate Native American representatives have been consulted, agree with the project objectives, and support the project's implementation. A letter from the Massachusetts Commission on Indian Affairs must accompany the project application.

Activity 7. Rehabilitation and operation of historic transportation buildings, structures, or facilities (including historic railroad facilities and canals)

Rehabilitation performed under this category must restore a historic transportation building, structure or facility to a condition that will allow it to function as a transportation facility while preserving its significant historic features. "Structures" include tunnels, bridges, trestles, embankments, rails, non-operational vehicles, canal viaducts, towpaths and locks, stations and other transportation features. Rehabilitation means returning the property to a state which makes possible contemporary use while preserving the significant historic features. A project may have eligible components and non-eligible components.

Historic transportation buildings, structures or facilities must be associated with the operation or construction of modes of surface transportation. Such building, structure or facility must be listed or eligible for listing in the National Register of Historic Places or listed in the State Register of Historic Places, in order to be eligible for Transportation Enhancement funding.

Activity 8. Preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian or bicycle trails)

This activity includes the acquisition, rehabilitation and development of railway corridors for conversion and use for bicycle and pedestrian trails and use. In any corridor that contains segments that are privately owned, public access must be provided and maintained in order that the corridor may be developed and rehabilitated for use as a bicycle or pedestrian facility. Transportation Enhancement funds shall not be used to purchase land that is already in the public realm or for eminent domain actions involving any hostile taking of privately owned property.

Acquisition solely for rail corridor preservation is not eligible to receive Transportation Enhancement Program funds. All rail property acquired under this program must be used for transportation purposes, primarily for bicycle or pedestrian uses.

Activity 9. Control and removal of outdoor advertising

This activity includes the control and removal of existing non-conforming outdoor advertising signs, billboards, displays, and devices. In general, a non-conforming sign is one that conformed to the law at the time it was established, but does not conform to current laws or regulations.

Projects in this activity category may not include the removal of illegal signs under Section 131 of Title 23. Whenever feasible, this activity should be incorporated as a secondary activity under the scope of broader Transportation Enhancement projects.

Any projects subject to prior legally binding agreements concerning display or removal of outdoor advertising shall not be eligible for Transportation Enhancement funds.

Activity 10. Archaeological documentation and research

This activity includes research on archeological sites, experimental activities in archaeological site preservation and interpretation, and planning to improve identification, evaluation and treatment of archaeological sites located in a transportation corridor.

This activity also includes rehabilitating archaeological excavation records and the cataloging of artifacts previously recovered along a transportation corridor. Their significance, and public appreciation for the site, may be enhanced through interpretative signs, displays, and publications. Although museum creation is not eligible under this category (see Activity 12), public exhibition of the artifacts may be eligible.

All work must be conducted in compliance with the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation*, and must be managed under the direction of professionals meeting the standards published in the Code of Federal Regulations, 36 CFR, Part 61. The qualifications define minimum education and experience required to perform eligible historic preservation activities. In some cases, additional areas or levels of expertise may be needed depending on the complexity of the task and the nature of the historic properties involved. Funds are not intended for normal mitigation.

Transportation Enhancement projects that include Native American sites must provide evidence that appropriate Native American representatives have been consulted, agree with the project objectives, and support the project's implementation.

Activity 11. Environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity

TEA-21 expanded the category under Transportation Enhancements that addresses environmental mitigation for water pollution due to highway runoff and added measures to reduce vehicle-caused wildlife mortality while maintaining habitat connectivity. These activities can be either stand-alone projects or part of a larger existing or proposed project under the Transportation Enhancement activities as long as such activity is related to the surface transportation system.

Transportation Enhancement funds may be used to rectify current or prior impacts from transportation facilities. Examples of such projects to improve water quality include:

- Retrofitting an existing highway by creating a wetland to filter highway runoff based on water pollution impacts from the road.
- Improving streams and drainage channels through landscaping to promote filtering and improve the overall water quality conditions of receiving channels.

This category also addresses activities for the reduction of vehicle-caused wildlife mortality while maintaining habitat connectivity. This funding category is not limited to threatened and endangered species, but includes prevention of any wildlife mortality directly caused by vehicles. The criteria used to determine a need for a wildlife crossing or control project in a specific location are determined by the migration patterns, habitat use and distribution. Crossing characteristics of wildlife, as shown through data collection on safety of motorists, habitat fragmentation, and wildlife mortality, shall be provided to support an application.

Examples of projects eligible for funding in this Transportation Enhancement category include:

- Wildlife underpass or overpass projects.
- Measures proposed at areas identified as crossings for wildlife, which may include necessary fencing and other marking and mitigation techniques associated with movement of wildlife across transportation corridors.
- Bridge extensions to provide or improve wildlife passage and wildlife habitat connectivity.

If a direct measure to reduce wildlife mortality at a highway crossing area is determined to be infeasible (e.g., too expensive, geologically impossible, or unsafe for motorists), it might be possible to

compensate for the loss of wildlife due to vehicle collisions by developing new habitat resources, or by improving existing habitat resources to support additional population. The results could be deemed to reduce the effects of the highway-related mortality on the long-term population stability or public benefits of wildlife. When considering this approach, coordination with appropriate wildlife management agencies must be initiated. The decision to undertake this approach should be made in cooperation with both MassHighway and the Federal Highway Administration division office.

Activity 12. Establishment of transportation museums

Transportation museums using Transportation Enhancement funds must meet the following definition of a museum. The facility must (1) be a legally organized not-for-profit institution or part of a not-for-profit institution or governmental entity; (2) be essentially educational in nature; (3) have a formally stated mission; (4) have at least one full-time paid professional staff member who has museum knowledge and experience and is delegated authority and allocated financial resources sufficient to operate the museum effectively; (5) present regularly scheduled programs and exhibits that use and interpret objects for the public according to accepted standards; (6) have a formal and appropriate program of documentation, care, and use of collections and/or tangible objects; and (7) have a formal and appropriate program of presentations and maintenance of exhibits.

Establishment of transportation museums is intended to mean funding of capital improvements. Such funding is not intended to reconstruct, refurbish, or rehabilitate existing museums, or portions of museums, that are not for transportation purposes. They are not to cover operations or maintenance of the facility. The museum must be related to surface transportation. Establishment of transportation museums is interpreted to include the costs of the structure. Displays, segments of building, or objects not directly related to transportation may not be funded with Transportation Enhancement funds. Transportation Enhancement funds may be used to build a new facility or convert an existing building or portion for use as a transportation museum.

The museum must be open to the public and run by a public or non-profit organization meeting the definition of museums stated above in this section. If entrance fees are charged for the museum, a portion of the fee should be provided for the long-term maintenance and operation of the facility.

The legislation governing the Transportation Enhancement program specifically refers to Transportation Enhancement activities as "relating to surface transportation." Therefore, Transportation Enhancement funds are not to be used to preserve aircraft or create an airport or air museum. Objects or structures related to aviation are not normally eligible for Transportation Enhancement funds.

SECTION 3
THE APPLICATION PROCESS

Introduction

The Transportation Enhancement Program application process is comprised of two phases: the pre-application process and the final application process. All applicants for both regional and statewide project funding are required to complete the pre-application process prior to entering into the final application process. Those projects requesting statewide funding must submit a letter of intent to the Bureau of Transportation Planning and Development prior to submitting a pre-application.

If a project has been deemed eligible for statewide funding (See Section 3.3.1), the applicant should work with the appropriate Regional Planning Agency(s) or the Transportation Enhancement Program Coordinator to develop the proposal. If a project impacts two or more Regional Planning Agencies, the applicant should contact the Enhancement Program Coordinator at MassHighway directly. The applicant should provide copies to the appropriate Regional Planning Agencies of correspondence for regional and statewide projects. It is important that each applicant discuss with the appropriate Regional Planning Agency the necessary steps to secure funding for regional projects on the local Metropolitan Planning Organization's Transportation Improvement Program.

The applicant is responsible for researching information, preparing documentation, and assuring that all materials submitted to the Regional Planning Agency or the Enhancement Steering Committee are complete and correct. The applicant is expected to work closely with the Regional Planning Agency and MassHighway staff during the application process and the subsequent review process.

Step 1 - Initial Contact

Any party interested in pursuing a Transportation Enhancement project should contact the appropriate Regional Planning Agency or Transportation Enhancement Program Coordinator at MassHighway to discuss the project proposal. Regional and statewide projects will proceed through a Regional Planning Agency, and *some* Statewide projects will proceed through the Transportation Enhancement Program Coordinator. (See Section 1)

Step 2 - Letter of Intent (Statewide Projects only)

Regional project proposals should skip step 2 and proceed to step 3.

For a project presumed to be eligible under the statewide category, the applicant must submit a letter of intent to the Bureau of Transportation Planning and Development prior to beginning the pre-application process. The letter of intent must include the project name, amount of funding requested, brief description of the project, and why the project is eligible for Statewide Transportation Enhancement funding.

The applicant must note if the application will be submitted through one or more Regional Planning Agencies, with one Regional Planning Agency acting as the lead, or if the project will be submitted through the Transportation Enhancement Program Coordinator.

Upon review of the letter of intent by MassHighway and the Enhancement Steering Committee, the applicant and Regional Planning Agency may be invited to submit a pre-application.

Step 3 - Pre-Application Submission

The purpose of the pre-application process is to assist applicants with project development and to assure, prior to approval, that proposed projects can be implemented. The applicant will be required to complete the planning stage of the process, undertake most of the project development work, and identify any obvious issues of concern. Furthermore, if a feasibility study is necessary, this will be required before the pre-application stage begins.

Applicants for both regional and statewide projects are required to submit a pre-application. The pre-application process is designed to provide applicants with the technical resources and advice necessary to assure that projects are properly prepared to receive and use Transportation Enhancement funding.

Regional Planning Agencies Review Process

Each Regional Planning Agency is responsible for soliciting and screening regional and statewide project applications. If a project appears eligible for statewide funding, the applicant should continue to work with the Regional Planning Agency to develop its proposal. If a project impacts two or more Regional Planning Agencies, the applicant should contact the Enhancement Program Coordinator at MassHighway.

The Regional Planning Agency should provide applicants with information regarding programming of funds through the local Metropolitan Planning Organization. At the time of application, the Regional Planning Agency will be responsible for submitting an itemized funding schedule for each eligible work category by Transportation Improvement Program year. (Funding a project over several Transportation Improvement Program years is allowed and should not be confused with project phasing by work category in Section 4.9.)

MassHighway accepts regional and statewide applications on an open enrollment basis throughout the year. Each Regional Planning Agency may determine its own timeline for accepting regional Transportation Enhancement proposals. Statewide Transportation Enhancement proposals are accepted by both Regional Planning Agencies and MassHighway on an open enrollment basis, unless determined otherwise by the Enhancement Steering Committee. MassHighway will recommend the appropriate funding year for statewide projects on the State Transportation Improvement Program.

Although project scoring criteria have been eliminated in these guidelines, each Regional Planning Agency may develop its own scoring or evaluation method. In soliciting projects, Regional Planning Agencies should encourage the submission of projects that are not only eligible for funding under state and federal guidelines, but that are also well-prepared for implementation. It is essential that responsible

Regional Planning Agency staff be familiar with the program requirements contained in these Guidelines and with sound project development practices.

In reviewing pre-applications, the Regional Planning Agency should assure that the application is complete, portrays a fair and accurate status of the project, and meets the criteria and requirements of these Guidelines, including identifying the source of funds for the applicant's funding share. Regional Planning Agency staff is encouraged to contact the Transportation Enhancement Program Coordinator at MassHighway with any questions regarding the pre-application.

The Regional Planning Agency is encouraged to work with project applicants to submit project applications in their entirety. (See Section 4.9 Project Phasing by work category)

In its review of pre-applications, the Regional Planning Agency must, at a minimum, assure that the review includes the following determinations:

- Compliance with these guidelines;
- Eligibility to receive Transportation Enhancement funds;
- Project's capability to comply with federal and state design standards;
- Consistency with state, regional and local plans;
- Organization, clarity and accuracy of materials submitted;
- Readiness for implementation upon receipt of funding;
- Sufficiency of the project scope of work to allow a full understanding of the project's steps to implementation.
- Appropriate itemized Transportation Improvement Program schedule for funding each phase of the project.
- Relationship of the project's budget to the scope of work, and eligibility of items in the budget to receive funding;
- Ability to secure and identify the applicant's required funding share;
- Disclosure of unresolved development issues in the pre-application (unresolved issues with right-of-way ownership or access, environmental resources, or permitting, for example);
- Adequacy of community support for the project; and
- Necessity of a site visit(s) to evaluate the project and the proposal.

MassHighway will only review those projects that Regional Planning Agencies recommend for review. The Regional Planning Agency is expected to work with members of its Metropolitan Planning Organization and recommend funding to its Metropolitan Planning Organization for programming on the regional Transportation Improvement Program.

The Regional Planning Agency is responsible for advancing projects which, in its opinion, meet the eligibility requirements, reflect a sound use of funds, are responsive to local, regional and statewide plans, and are in full compliance with all applicable laws, rules, regulations and guidelines. The regional selection committee should review projects that are feasible and implementable before submitting a project to MassHighway.

The Regional Planning Agency should construct a selection process that is fair to all applicants, open to the public, and responsive to its constituents. Upon submission of a pre-application, MassHighway should be made aware of the Regional Planning Agency's selection process. The Regional Planning Agency should deal directly with the applicant on any necessary changes to the application prior to submitting the application to MassHighway for review.

The pre-application must be complete, including all relevant attachments. It must include a complete detailed Scope of Work and an Itemized Budget for each phase of the project. The budget should identify the source of funds for the applicant's funding share. The applicant must provide evidence that the required 10% project match is secured or there is reasonable evidence that the match will be available when the project is ready to be implemented. (See Section 4.6.3) Maps and diagrams should be attached to explain the details and location of a project, as appropriate.

Although a public hearing is not required during the pre-application process, it is encouraged. Information pertaining to any type of city council or board of selectman vote or municipal referendum or hearing, and evidence of support or opposition to the project are important to disclose at this time. The pre-application should be well-written and easily understood by the reader.

Regional Planning Agencies are expected to keep on file copies of all proposals submitted for review, including any relevant correspondence. A record of the events that take place for each project application should be kept. Upon request, such records shall be made available to MassHighway and the Transportation Enhancement Steering Committee.

Upon completion of its review of the pre-application, the Regional Planning Agency should meet with the applicant to present its findings. If the Regional Planning Agency and its Regional Selection Committee support the project for submission to MassHighway, the applicant is responsible for making any necessary revisions to the pre-application in accordance with the requirements of the Regional Planning Agency. After receipt of a properly revised pre-application, the Regional Planning Agency will transmit it to the Enhancement Steering Committee.

The Regional Planning Agency will be required, as part of the project application, to submit a brief description of the Regional Selection Committee, its membership, and its review process. Any questions, concerns or objections of the Regional Selection Committee should be noted. All other relevant attachments pursuant to these guidelines should be enclosed at the time the application is submitted to MassHighway and the Enhancement Steering Committee for review.

The applicant must provide an original plus eleven (11) complete copies of each pre-application for submission to MassHighway and the Enhancement Steering Committee. Each copy must be submitted in an orderly and efficient manner. All pre-applications must be submitted using the standard MassHighway pre-application form. Each copy must contain <u>all</u> of the required elements of the pre-application form.

The Transportation Enhancement Program Guidelines and forms can be obtained through each Regional Planning Agency (See Appendix D). The guidelines and forms are available as a paper copy or electronically. Please note, all applications, both pre-applications and final applications, must be submitted on the standard MassHighway application form. Any changes to or reproductions of the MassHighway application form will not be accepted. For example, the application form should not be retyped or altered in any way.

All pre-applications must be submitted to the following address:

Transportation Enhancement Steering Committee
c/o Transportation Enhancement Program Coordinator
Massachusetts Highway Department
Bureau of Transportation Planning and Development
10 Park Plaza, Room 4150
Boston, MA 02116

MassHighway's Review to the Enhancement Steering Committee

MassHighway will begin its review of the pre-application upon receipt from the Regional Planning Agency. The Enhancement Guidelines in effect at the time the pre-application is received by MassHighway will govern the project application.

MassHighway staff will conduct its review of the pre-application in a timely manner. The Transportation Enhancement Program Coordinator and Transportation Enhancement Program Engineer at MassHighway will review each pre-application. Other MassHighway staff and District staff may also review the pre-applications, when deemed necessary. MassHighway may also conduct its own site visit.

After an internal review by MassHighway, the Transportation Enhancement Program Coordinator will contact the applicant to either schedule a meeting or notify the applicant that its application will be brought before the next Enhancement Steering Committee meeting. Once the application is brought before the Enhancement Steering Committee, the Enhancement Steering Committee will review the proposal and inform the applicant and Regional Planning Agency of the Enhancement Steering Committee's findings and recommendations on how to proceed.

If additional information is requested, the applicant and Regional Planning Agency will be responsible for providing any additional information within 60 days. Upon satisfactory resolution of any outstanding issues by MassHighway and the Enhancement Steering Committee, the Enhancement Program Coordinator will invite the applicant and Regional Planning Agency to proceed to a final application.

Step 4 - Final Application Submission

The final application must be complete, including all relevant attachments. The final application should reflect any necessary changes required by the Regional Planning Agency, MassHighway and Enhancement Steering Committee during the pre-application phase. A public hearing on the proposal shall be held prior to submission of the final application. The outcome of any town or city council vote

on the proposal should be part of the final application. Furthermore, it is important to disclose any additional findings on organized opposition and support for the project. Non-disclosure of this information could jeopardize the project.

The applicant, through its Regional Planning Agency, must submit one original and eleven (11) complete copies of each final application form to the Transportation Enhancement Steering Committee. Of the twelve complete sets, the original must be submitted loose leaf (e.g. three-ring binder) and the additional eleven copies must be bound. Stapled or paper clipped proposals are not acceptable and will be returned. Each copy must be compiled so that the final application and all required forms, photographs (if applicable), and other supporting documentation comprise a complete, organized package.

All final applications should be submitted to the following address:

Transportation Enhancement Steering Committee
c/o Transportation Enhancement Program Coordinator
Massachusetts Highway Department
Bureau of Transportation Planning and Development
Bureau of Transportation Planning and Development
10 Park Plaza, Room 4150
Boston, MA 02116

Transportation Enhancement Steering Committee Review Process

The Transportation Enhancement Steering Committee reviews all letters of intent, pre-applications and final applications and determines feasibility and eligibility for funding. The Transportation Enhancement Steering Committee then votes to recommend or not recommend approval of projects to the Secretary of Transportation. The Transportation Enhancement Program Coordinator serves as staff to the Transportation Enhancement Steering Committee.

If the Transportation Enhancement Steering Committee determines that a proposal requires further information or clarification to evaluate the proposal and render a sound recommendation to the Secretary, it will request such information from the Regional Planning Agency and applicant. The Regional Planning Agency will have 60 days from the date of notification to respond to the Transportation Enhancement Steering Committees request for information. A request to extend the time period to submit additional information must be submitted in writing and approved by the Bureau of Transportation Planning and Development prior to the expiration of the 60 days.

Once the Transportation Enhancement Program Coordinator has received the information, the project will be re-evaluated by the Transportation Enhancement Steering Committee at its next quarterly meeting. Should the Regional Planning Agency fail to provide the requested information within 60 days, the Transportation Enhancement Steering Committee may recommend disapproval of the proposal to the Secretary of Transportation.

In order to recommend approval of a proposal to the Secretary of Transportation, the Transportation Enhancement Steering Committee must determine that:

a) The proposal meets all program requirements, including eligibility criteria, as outlined in these guidelines;
b) The proposal meets program requirements in the appropriate Transportation Improvement Program year;
c) The proposal is consistent with the goals and objectives of regional transportation plans and policies;
d) The proposal is well-conceived and will provide benefits to the transportation system;
e) The proposal has adequate funding mechanisms intact for state and local shares; and
f) The proposal is feasible and well prepared for implementation.

For a proposal to be deemed feasible and well-prepared for implementation, the Transportation Enhancement Steering Committee must determine that the application process has been followed, including all program requirements, and the proposal meets the criteria associated with its assigned category. (See Section 3.4.5 Categories of Work)

The Enhancement Steering Committee reserves the right to reconsider any previously approved Transportation Enhancement Project application.

The Transportation Enhancement Steering Committee may recommend that the Secretary of Transportation approve, approve with conditions, or deny any project submitted for consideration.

Transportation Enhancement Steering Committee Quarterly Meeting Schedule

The Transportation Enhancement Steering Committee reviews all letters of intent, pre-applications, and final applications on a quarterly basis throughout the year. Letters of intent for statewide projects will be reviewed by the Enhancement Steering Committee upon receipt. Pre-applications will be reviewed by the Enhancement Steering Committee once MassHighway has conducted its review and made its recommendations. Final applications will be reviewed after any pre-application comments have been addressed and the application is complete and ready for review by the Enhancement Steering Committee.

All requests for consideration by the Enhancement Steering Committee will be reviewed during the next scheduled meeting, provided the project is received and ready to be reviewed at least two weeks prior to the meeting.

Following is the quarterly schedule for the Transportation Enhancement Steering Committee:

Transportation Enhancement Steering Committee
Quarterly Schedule

Jan., Feb., Mar. 1st quarter
Transportation Enhancement Steering Committee Meeting - Last Wednesday in March

April, May, June 2nd quarter
Transportation Enhancement Steering Committee Meeting - Last Wednesday in June

July, Aug., Sept. 3rd quarter
Transportation Enhancement Steering Committee Meeting - Last Wednesday in Sept.

Oct., Nov., Dec. 4th quarter
Transportation Enhancement Steering Committee Meeting - First Wednesday of January

NOTE: The Transportation Enhancement Steering Committee reserves the right to alter this schedule.

Step 5 - Review by the Massachusetts Secretary of Transportation

Upon receipt of the recommendations of the Transportation Enhancement Steering Committee, the Massachusetts Secretary of Transportation may, at his or her sole discretion, approve or deny any Transportation Enhancement proposal submitted for consideration. Applicants and Regional Planning Agencies will be notified in writing of final action taken on each proposal.

SECTION 4
PROJECT FUNDING AND PROJECT PHASING

4.1 Introduction

This section discusses how Transportation Enhancement projects are typically funded and the requirements regarding project phasing and project segmenting.

Federal and state governments regulate project funding. There are requirements discussed in this section that Regional Planning Agencies and applicants must follow closely. Failure to comply may result in an applicant's inability to recover expenses.

4.2 Cost Estimates & Cost Overruns

It is very important to estimate accurately the cost of a Transportation Enhancement project. This could determine whether or not a project proceeds to implementation or construction.

Accurate cost estimates are very important to the Regional Planning Agency, other Metropolitan Planning Organization members, the Federal Highway Administration and MassHighway, since the amount of funding programmed for each project in the regional Transportation Improvement Program and the State Transportation Improvement Program is based upon the project applications. Therefore, inaccurate cost estimates could result in the programming of inadequate funding amounts or over-programming funds for the project at the regional and state levels. Significant inaccuracy could seriously delay or jeopardize the implementation of a Transportation Enhancement project.

A cost overrun occurs when a project is approved for one amount and it later increases. The applicant may then have two options:

1. The applicant can support the cost overrun with funds from another source that does not require programming by the Metropolitan Planning Organization; or
2. If the applicant is seeking federal or state funds and the cost overrun exceeds ten percent (10%) of the approved project cost, the applicant must:
   a) resubmit the project to the Enhancement Steering Committee for approval by the Secretary of Transportation;
   b) receive approval from the Metropolitan Planning Organization; and
   c) receive approval from the MassHighway Project Review Committee, if the project had previously been reviewed by the Project Review Committee.

MassHighway reserves the right to hold the applicant responsible for any cost overruns that exceed 10% of the original project application. Therefore, cost overruns will be discussed on a case-by-case basis.

4.3 Scope Changes

Changes in scope occur when a project is submitted and approved for funding subject to one project scope and later the project scope changes and cost overruns may or may not occur. If a change in the original project scope occurs, the applicant may have to submit a request for a change in scope to the Enhancement Steering Committee for review and subsequent approval by the Secretary of Transportation.

The Chief Engineer for MassHighway and the Director of the Bureau of Transportation Planning and Development will determine whether a project scope must be returned to the Enhancement Steering Committee and Secretary of Transportation.

4.4 Project Advertisement

Generally, MassHighway will advertise and build projects involving construction. Therefore, project expenses would not be reimbursed to the applicant but reimbursed to MassHighway.

4.5 Project Funding

The Transportation Enhancement Program is a reimbursement program. Funds are reimbursed to the applicant on a project percentage-complete basis; therefore, applicants must spend their own funds initially. MassHighway will reimburse the applicant upon receipt of required documentation providing evidence that the expenses incurred have been paid by the applicant and are eligible for funding.

Regardless, any costs incurred prior to an executed contract and a written Notice to Proceed from MassHighway will not be reimbursed. Therefore, application and contract preparation costs are not eligible for funding.

4.6 Minimum Project Funding Threshold

Projects requesting a total project cost of less than $50,000 in Transportation Enhancement funding will not be considered.

4.7 Federal Funding Share

The Federal Highway Administration will fund 80% of a Transportation Enhancement project's approved project costs. All reimbursable costs associated with Transportation Enhancement projects are subject to the final approval of MassHighway and the Federal Highway Administration.

Transportation Enhancement funds are subject to all of the requirements of Title 23, United States Code. Applicants and others unfamiliar with the kinds of costs typically incurred on Title 23 federal-aid projects should seek assistance from the State-Aid Engineer at their MassHighway District Office.

4.8 Funding Breakdown

Transportation Enhancement projects are funded as follows:

4.8.1 Federal Highway Administration Funding Share

The Federal Highway Administration will fund 80% of approved project costs.

4.8.2 State Agency Funding Share

MassHighway may fund up to 10% of approved project costs. If the applicant provides a funding share of more than 10% of the project cost, the State may take credit towards its share.

4.8.3 Other State and Federal Agency Funding Share

For all projects submitted by, on behalf of, or in conjunction with another State or Federal agency, such agency is responsible for providing at least the 20% non-federal share for the project in the form of cash or eligible in-kind services subject to the requirements set forth in Section 4.8.4. Staff time is not an eligible in-kind service.

4.8.4 Applicant Funding Share

Applicants, other than State or Federal agencies, must fund at least 10% of the approved project cost in the form of cash or eligible in-kind services. Staff time is not an eligible in-kind service.

Under both sections 4.8.3 and 4.8.4, applicants must show how their share of the project cost will be provided and evidence that it is secured. There must be reasonable evidence that the applicant share will be available when the project is ready to be implemented. If the match is in the form of cash, the applicant must provide evidence that the cash is secure and must either be appropriated in a municipal, state, or federal budget or set aside in a separate, interest bearing escrow account.

In-kind services are handled on a case-by-case basis and are only eligible if approved by both the MassHighway and the Federal Highway Administration. The Federal Highway Administration will allow consideration of the value of services as part of the non-federal share, provided the cost of the services are not incurred or expended prior to federal approval, and the non-federal share meets the requirements set forth in 23 U.S.C. 120(b) and other applicable sections of the law. (See Federal Highway Administration Final Guidance for Transportation Enhancement Activities, 23 United States Code, and TEA-21, December 17, 1999, Page 6-8). Staff time is not an eligible in-kind service.

4.9 Project Phasing

A realistic cost estimate must be provided for each phase and for the total estimated project cost to allow the Transportation Enhancement Steering Committee to understand the full scope of the project and to avoid future cost overruns.

Each phase must have a funding schedule from the appropriate Regional Planning Agency that explains in which Transportation Improvement Program year each phase will be programmed. For example, if a project is requesting funding for Property Acquisition, Final Design and Construction, the project application must have a realistic funding schedule that outlines the Transportation Improvement Program year in which each phase will be programmed.

MassHighway and the Federal Highway Administration will only obligate funds for a particular project when it is ready to be implemented. For example, if a project is pending completion of design, the construction funds will not be obligated until the design is complete.

MassHighway does not allow phasing of projects by work category. Requests for funding of more than one of the eligible work categories must be received in a single project application

4.10 Project Segmenting

Project segmenting is the geographic or physical division of a project area into separate parts. MassHighway will allow project segmenting for stand-alone projects that are received as a single project application for all of the relevant work categories.

An example of project segmenting is a 20-mile bike path through four towns for which funding is sought for one of the four towns and/or 5 miles of the 20-mile bike path.

Each segment must provide a benefit to the transportation system and constitute a stand-alone unit not dependent upon any other phase for its utility as a transportation project. The proposal's project description must provide a brief description to better understand the full scope of the project.

SECTION 5
AGENCIES AND THEIR ROLES

5.1 Federal Highway Administration

The Federal Highway Administration has responsibility for approving the State Transportation Improvement Program, for approving federal environmental documents, for allocating funds to the state, and for authorizing and approving Transportation Enhancement Program expenditures.

5.2 Executive Office of Transportation and Construction

The Executive Office of Transportation and Construction works with the Transportation Enhancement Steering Committee and MassHighway and interacts with the Federal Highway Administration on program issues. The Executive Office of Transportation and Construction assures that the requirements of Title 23 are met, and it has the responsibility for final acceptance of projects.

5.3 Massachusetts Highway Department (MassHighway)

MassHighway has primary responsibility for the administration of the Transportation Enhancement Program. MassHighway works with the Transportation Enhancement Steering Committee, Executive Office of Transportation and Construction and others to develop program policies and procedures. MassHighway monitors program implementation.

5.4 Regional Planning Agencies

Regional Planning Agencies are responsible for developing their own project review and acceptance policies. Each Regional Planning Agency is responsible for selecting, reviewing and submitting Transportation Enhancement proposals within their region. Each Regional Planning Agency reviews projects for eligibility and submits projects to the Transportation Enhancement Steering Committee for its review and recommendation to the Secretary of Transportation.

Regional Planning Agencies are responsible for maintaining accurate records of the review process and ensuring adequate public participation in the regional selection process. A Regional Planning Agency reviews each project to assure that it is properly prepared for implementation. Each Regional Planning Agency must also:

- Appoint a regional selection committee to review and recommend projects to the Enhancement Steering Committee.
- Work with the Massachusetts Association of Regional Planning Agencies to review program guidelines and policies.
- Work with other Metropolitan Planning Organization members and coordinate the Transportation Enhancement selection process to program Transportation Enhancement projects in the regional Transportation Improvement Program.

5.5 Transportation Enhancement Steering Committee

The Executive Office of Transportation and Construction established the Transportation Enhancement Steering Committee to assist in project selection at the state level. Appointed by the Secretary of the Executive Office of Transportation and Construction, the Transportation Enhancement Steering Committee works to develop program guidelines; evaluate regional and statewide proposals for compliance with eligibility and program requirements; and make recommendations to the Secretary of Transportation for action on all Transportation Enhancement projects.

The Transportation Enhancement Steering Committee includes one representative of each of the following state agencies and two representatives from the Massachusetts Association of Regional Planning Agencies.

Members of the Transportation Enhancement Steering Committee include representatives of the following:

- Executive Office of Transportation and Construction (1)
- Massachusetts Highway Department (1)
- Massachusetts Historical Commission (1)
- Executive Office of Environmental Affairs (1)
- Massachusetts Association of Regional Planning Agencies (2)

The Transportation Enhancement Program Coordinator at the Bureau of Transportation Planning and Development serves as staff to the Enhancement Steering Committee. The coordinator reviews and prepares project applications for review by the Enhancement Steering Committee.

5.6 Massachusetts Historical Commission

The Massachusetts Historical Commission, through the State Historic Preservation Officer, has responsibility for the administration of the historic preservation program in Massachusetts. It assists the Regional Planning Agencies, the Executive Office of Transportation and Construction, and MassHighway in the evaluation of historical, cultural, and archaeological properties. The Federal Highway Administration and MassHighway coordinate with the Massachusetts Historical Commission to ensure full compliance with Section 106 of the National Historic Preservation Act, as amended. The Massachusetts Historical Commission is the office of the State Archaeologist, who issues permits for research on publicly owned sites or properties under a preservation restriction Massachusetts General Laws, Chapter 9, Section 26A & 27C.

5.7 Executive Office of Environmental Affairs

The Executive Office of Environmental Affairs assists the Transportation Enhancement Steering Committee in selecting proposals that comply or can be made to comply with environmental laws, rules and regulations. The Executive Office of Environmental Affairs has responsibility for assuring that projects adhere to environmental regulations. Various departments and agencies under the Executive Office of Environmental Affairs jurisdiction provide for environmental review of certain projects through the Massachusetts Environmental Protection Agency Unit, and issue environmental permits as required.

5.8 Massachusetts Association of Regional Planning Agencies

The Massachusetts Association of Regional Planning Agencies is a statewide organization of the commonwealth's 13 Regional Planning Agencies. Each Regional Planning Agency, in turn, is comprised of representatives of the member cities and towns constituting its geographic region.

APPENDIX A

COMMONWEALTH OF MASSACHUSETTS
TRANSPORTATION ENHANCEMENT PROGRAM GUIDELINES
EFFECTIVE NOVEMBER 2003

APPLICATION FORM INSTRUCTIONS

General Instructions:

Before filling out the application form, applicants should have carefully reviewed the Transportation Enhancement Program Guidelines and contacted the appropriate Regional Planning Agency or Transportation Enhancement Program Coordinator at the Bureau of Transportation Planning and Development. A list of the 13 Regional Planning Agencies and their addresses is included in (Appendix D). Applicants should contact the appropriate Regional Planning Agency for details on its filing requirements.

This instruction sheet is keyed to the item numbers on the application form. Special guidance for completing each item on the Application Form is contained in these instructions. Please note, when filling out the electronic version of the application form, spacing is limited to the space shown on the hard copy. Contact the Regional Planning Agency regarding any questions in filling out the application or the Transportation Enhancement Program Coordinator for clarification.

Item Number

1. **Project Name:** Please assign a project name to the project proposal that will be used throughout the project. If this is a phase of a project that was approved prior to these Guidelines, please maintain the same project name followed by the appropriate Roman numeral for the next phase.

2. **Project Applicant:** Please refer to Section 2.2 of the Enhancement Guidelines to determine who is an eligible project applicant. Provide the applicant name, agency name, address, telephone and fax numbers, and e-mail address. *For example, applicant name, City of Waltham, and agency name, City of Waltham Planning Department; or applicant name, Executive Office of Environmental Affairs, and agency name, Department of Conservation and Recreation.* If there is more than one project applicant, please select one to be the lead project applicant and describe its relationship to each additional applicant in the project description.

3. **Applicant's Contracting Officer:** Please provide the name, title, address, telephone and fax numbers, and e-mail address of the chief official having authority to contract with MassHighway.

4. **Contact Person:** Please provide the name, title, address, telephone and fax number, and e-mail address of the person who is authorized to discuss the proposal on behalf of the applicant. If there is more than one contact person, please pick one person as the lead contact.

5. **Project Sponsor Information:** Please refer to Section 2.2 of the Enhancement Guidelines to determine who is a project sponsor. If the answered to question #5 is "yes", please provide the sponsor name, contact name, title, address, telephone and fax number, and e-mail address. Please note, appropriate procurement procedures may be necessary when contracting with a sponsor.

6. **Regional Planning Agency:** Please provide the name, address, contact person and phone number of the appropriate Regional Planning Agency(s) in which this project lies. (See Appendix D for a list of Regional Planning Agencies.) A Regional Planning Agency is responsible for screening a project application before it is submitted to the Statewide Enhancement Steering Committee.

7. **MassHighway District Office:** Please provide the District #, address, contact person and phone number of the appropriate District(s) office in which this project lies. (See Appendix D for a list of District Offices.) A MassHighway District Office should be aware of a potential project application before it is submitted to the Statewide Enhancement Steering Committee.

8. **Project Type:** Please refer to Section 2.0 of the Guidelines for the description of project types. Please indicate the project type by checking the appropriate box. Please check only one box. All regional projects should be submitted through a Regional Planning Agency.

9. **Type of Work Category:** Please refer to Section 2.0 of Guidelines for description of work categories. Please indicate the work category of the project by checking the appropriate box. Please check all that apply, including those that are part of the non-federal or applicant share. (See Section 4.9 Project Phasing.)

10. **Prior Funding:** Please indicate if this project proposal has received prior funding through the Transportation Enhancement program and in what guideline year.

11. **Brief Project Proposal Description:** Please provide a short description of the Enhancement portion of the project, and briefly explain how the project is eligible pursuant to the Transportation Enhancement Program Guidelines. Include the total cost of the project and amount of Enhancement funding the project application is requesting.

12. **Eligibility for Funding:** Please list each eligible Transportation Enhancement activity this project is qualified for pursuant to the Transportation Enhancement Program Guidelines. The primary Enhancement activity should be listed first, and any secondary activities to

follow. Only one activity is required to qualify. Please do not add activities that do not apply.

Please describe how the project meets the various eligibility criteria:

A.) All projects must demonstrate a "direct and substantial relationship to the surface transportation system." Applicants must make the case that a project relates to surface transportation, and the relationship is direct and substantial by function, proximity or impact (See Section 2.5.1 of the Guidelines).

B.) Only transportation projects that are "non-traditional" may qualify to receive Enhancement funding. Non-traditional projects are those that are not part of a traditional roadway project and propose work that does not typically qualify for federal transportation funding assistance (See Section 2.5.2 of the Guidelines).

C.) The principal activity of the proposed project must be listed as a Transportation Enhancement Activity. Projects may have one or more than one enhancement activity. Identify the principal enhancement activity that best represents the project objective. Also, identify any other enhancement activities that are a part of the project. For example, a project's principal activity may be to rehabilitate a historic bridge, but it may also include landscaping and other scenic beautification, and mitigation of water pollution due to highway runoff (See Section 2.5.3 of the Guidelines).

D.) Only statewide projects need to meet this criterion. Please briefly describe how the project has statewide significance or how it is multi-regional in scale. (See Section 2.3.2.)

13. Funding Breakdown: The purpose of this item is to provide project reviewers with information regarding the total cost of a Transportation Enhancement project, and how the cost is apportioned among the various project work categories. Please do not leave boxes blank. If you are unsure on how to fill out this grid, please consult the Regional Planning Agency or Enhancement Program Coordinator. If a box does not apply, please place a zero (0) in the box.

Breakdown of Funding Grid – This breakdown of funding presents three columns. Take the total cost of each work category and disperse the percentages across the grid. For instance, the federal government will always fund up to 80% of all eligible project costs, and the Commonwealth of Massachusetts will fund up to 10% of all eligible project costs. The project applicant is responsible for funding a minimum of 10% of the project cost in the form of cash or in-kind services. If the applicant can provide more than 10% of the project cost, the State will take credit for the additional share. It is important to note that the Federal Highway Administration provides 80% of the project cost, and this is necessary for bookkeeping purposes as well. If another federal or state agency submits the project, that agency is responsible for funding up to 20% of the eligible project cost. Please indicate only the amount of enhancement funding being requested for each applicable project work category.

Applicants for projects requesting funding for any of the four eligible work categories should add each column across and insert in the total funding requested column. If in-kind services are being proposed, please include them on the funding breakdown. The total funding requested column then should be added down and across to come up with the total project cost.

Indicate the percentage of funding breakdown for each column. The application should indicate what the percentage splits will be. For example, a project applicant may choose to fund more than the 10% applicant match, and therefore, a reduction in state funds would be necessary. The applicant should review both the state and federal requirements for eligible applicant shares before completing the grid, and provide an explanation of the source of its match. (See 4.8.4)

Furthermore, applicants must clearly state the source of their applicant match and the non-federal share. Design and Acquisition costs are eligible in some cases toward the non-federal share, as long as they were prepared in accordance with 23 U.S.C. A statement supporting federal requirements will be required. Please consult the Regional Planning Agency or Transportation Enhancement Program Coordinator to ensure the project meets the requirements.

14. Proposal Location/Limits: Provide a brief description of the location and its limits. Indicate the project's beginning and ending points and routes/roads/bridges/rivers/rail right-of-way, etc., the project follows or crosses.

15. Proposal Status: Please check all applicable boxes and answer all questions regardless of whether you are applying for that work category or not.

A.) If the planning/feasibility phase is complete, include a copy of the applicable study with the project proposal.

B.) Provide a listing of the estimated number of property takings and/or easements required for implementation of the project, if any. Note that even **temporary** construction easements require a Public Hearing/Meeting, and a "ROW Certificate" from MassHighway's Right-of-Way Bureau. Identifying and disclosing all right-of-way issues is necessary and crucial to the project's success. If you do not identify all right-of-way issues and your project is approved and later determined infeasible, the applicant will be responsible for repaying any and all federal and state funds.

C.) If the design of the project has begun or been completed, please provide the name of the designer. Indicate whether the designer is a MassHighway-approved design consultant or some other qualified designer. Also, indicate whether the plans have been reviewed by the appropriate MassHighway District Office, and provide the date when such review took place. If the design is not completed, provide an estimated date for completion.

If the project is in the Program, Property Acquisition, or Final Design stage (See Section 2.0 of Guidelines), please provide an estimated date when construction or implementation will begin and an estimated date for completion.

16. **Party Responsible for Future Maintenance and Operation:** Where applicable, please provide the name of the agency, department, or commission and the name, address and telephone number of the person who will be responsible for operating and maintaining the improvements requested in the proposal, such as the Departments of Planning, Public Works, Board of Selectmen, Metropolitan District Commission, etc. If applicable, the proposal must contain a letter from the official department representative stating that the official will be responsible for operating and maintaining the improvements constructed with Enhancement funding.

17. **Americans with Disabilities Act:** Please indicate whether the project requires a waiver from the Americans with Disabilities Act. If the project does require a waiver, please include a copy of the waiver as part of the project proposal.

18. **Public Participation:** On a separate sheet entitled "Public Participation" describe the steps taken to inform the public about the project. Please include the number of public meetings or hearings held, the issues discussed, support mentioned, or concerns raised, if any, by the participants. Also, if a public hearing has been held on the project, include a copy of the hearing minutes or notes in the proposal. Further, if the project has received any type of vote by a town meeting, city council, or agency, please include a certified copy of the vote taken.

19. **City council, town votes or municipal referendums:** See #18.

20. **Minutes/votes from public hearings:** See #18.

21. **Public Support:** Applicants are encouraged to append to a project proposal letters from public agencies, elected officials, citizens groups and others who actively support the project.

22. **Public Opposition:** Applicants are encouraged to append to a project proposal letters from public agencies, elected officials, citizens groups and others who actively oppose the project.

23. **Project Description:** On a separate sheet titled "Project Description," describe the proposed Enhancement project. Begin by providing a brief statement about the purpose and need for the project. For example, "The purpose of the project is to provide new pedestrian walkways and other pedestrian amenities along a 1,000 foot section of Main Street in downtown Walkville. Current pedestrian walkways are too narrow and do not provide sufficient amenities to attract shoppers to the downtown area." Follow the opening statement of purpose and need with a more detailed description of the project. Use quantitative descriptions and dimensions wherever possible, i.e., project length, width, number of parking spaces, width of sidewalk, number of proposed trees, shrubs, length and height of fencing, etc. Provide pictures and diagrams if possible to better describe the project's purpose. The project description should be clearly written so the reader can easily understand exactly what the project is intended to accomplish. In more detail, describe why this project is a non-traditional transportation project and meets the eligibility requirements of the Transportation Enhancement Program Guidelines. If appropriate, applications should include color photos of the project site prior to construction.

24. Site Plan(s): If applicable, on an 8 ½ X 11" sheet, include as part of the proposal a site plan of the project that is at a scale sufficient to clearly identify the proposed improvements.

25. Environmental Requirements: Provide answers to the environmental questions asked in the attached three-page environmental questionnaire (See Appendix C). On a separate sheet, list the environmental permits the applicant has received, filed, or plans to file.

26. Scope and Budget: This is a very important part of the project proposal and must be completed at the time of submission. On separate sheets entitled "Proposed Project Scope" and "Proposed Project Budget", show a ***detailed*** scope of work and ***detailed*** project budget for each eligible work activity. If a consultant has already been selected for the project, the consultant should be familiar with an adequate scope and budget submission; i.e. planning, final design, property acquisition, construction. The scope and budget should include the proposed applicant match and correspond with the items identified in the project description (see item #23). If the project is approved, the scope and budget will be attached to a contract with MassHighway.

27. Regional Planning Agency Selection Process: On a separate sheet of paper, briefly describe the Regional Planning Agency filing requirements and selection process, including application solicitation requirements and deadlines, if any, members names and affiliations, policies and procedures outlined for project determination, and any other pertinent information.

28. Funding Schedule by Transportation Improvement Program (TIP) year: On a separate sheet of paper, please provide a funding schedule by TIP year of each work category eligible for Transportation Enhancement funding. For example, if a project is requesting final design, property acquisition and construction, please provide the TIP year for which each work category will be programmed. For example, Property Acquisition in FFY04 for $x; Final Design in FFY05 for $x; and Construction in FFY06 for $x. A work category may be programmed over more than one TIP year depending on the extent and cost of the project and available funds.

29. Authorizing Signature: Please have the individual who is authorized to enter into a contract with MassHighway on behalf of the applicant sign and date the application form. Also, type the signatory's name and title in the space provided. This signature should match the information in item 3.

COMMONWEALTH OF MASSACHUSETTS

Executive Office of Transportation and Construction
Massachusetts Highway Department

APPENDIX B

FOR EOTC/MHD OFFICE USE ONLY

Project File #_____

Total Project Cost: $_____

Enhancement Funds Requested: $_____

COMMONWEALTH OF MASSACHUSETTS
TRANSPORTATION ENHANCEMENT PROGRAM GUIDELINES
EFFECTIVE NOVEMBER 2003

APPLICATION FORM

☐ PRE-APPLICATION ☐ FINAL APPLICATION

(ONLY PROJECT PROPOSALS THAT HAVE SUCCESSFULLY COMPLETED THE PRE-APPLICATION PROCESS ARE ELIGIBLE FOR SUBMITTING A FINAL APPLICATION.)

DATE:

Before filling out this application, please see attached Application Form Instructions (Appendix A).

All questions must be answered.

1. Project Name:

2. Project Applicant:

   Applicant Name:

   Agency Name:

   Address:

   Telephone Number: Fax Number:

   E-mail address:

   Is there more than one project applicant? ☐ Yes ☐ No

3. Applicant's Contracting Officer:

   Name:

   Title:

   Address:

   Telephone Number: Fax Number:

   E-mail address:

4. Contact Person:

   Name:

   Title:

   Address:

   Telephone Number: Fax Number:

   E-mail address:

5. Is the project to be managed by a sponsor other than the applicant? ☐ Yes ☐ No

   If yes, please give:

   Sponsor Name:

   Contact Name:

   Title:

   Address:

   Telephone Number: Fax Number:

   E-mail address:

6. Regional Planning Agency(s):

Name: Name:

Address: Address:

Contact person: Contact person:

Phone #: Phone #:

7. MassHighway District Office(s):

District #: District #:

Address: Address:

Contact person: _____ Contact person: _____

Phone #:_____ Phone #:_____

8. Project Type: (Check Only One) ☐ Regional ☐ Statewide

9. Type of Work Category: (Include even those work category(s) that are being proposed as the non-federal share/applicant match.)

☐ Program ☐ Property Acquisition ☐ Final Design ☐ Construction

A.) Are all work categories requesting Enhancement funding included in this one application?

☐ Yes ☐ No

If you answered "No" to 9A, please explain?

B.) Are any of these work categories requesting credit toward the non-federal share and applicant match?

☐ Yes ☐ No

If you answered "Yes" to 9B, please explain?

C.) Is this project part of a larger MassHighway and/or municipal roadway project?

☐ Yes ☐ No

If you answered "Yes" to 9C, please describe the nature of that project. (Include the type of funding, status of funding, and total project cost, including the Enhancement funding):

D.) Is there funding, other than Enhancement funding, either being applied for or already approved for this project?

☐ Yes ☐ No

If you answered "Yes" to 9D, please describe the other funding and what work categories it applies to. (Include the type of funding, status of funding, and total project cost, including the Enhancement funding):

10. Has this project proposal received prior funding approval under the Transportation Enhancement Program? ☐ Yes ☐ No

If yes, please list project proposal name:

Fiscal Year the application was approved:

Amount of approved project proposal funding:

What Work Categories were approved:

What is the present status:

11. Brief Project Proposal Description: (A detailed project proposal description is requested in item 23. In the space provided, describe the Enhancement component of the project only.)

12. Eligibility for Funding:

A.) Transportation Enhancement Activities:

TABLE OF TRANSPORTATION ENHANCEMENT ACTIVITIES
1) Provision of facilities for pedestrians and bicycles
2) Provision of safety and educational activities for pedestrians and bicyclists
3) Acquisition of scenic easements and scenic or historic sites
4) Scenic or historic highway programs (including the provision of tourist and welcome center facilities)
5) Landscaping and other scenic beautification
6) Historic preservation
7) Rehabilitation and operation of historic transportation buildings, Structures, or facilities (including historic railroad facilities and canals)
8) Preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian or bicycle trails)
9) Control and removal of outdoor advertising
10) Archeological planning and research
11)Environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity
12) Establishment of transportation museums

List only the eligible enhancement activities from the table above:

(The primary enhancement activity should be listed first and any secondary activities to follow.)

(You are only required to indicate one eligible activity to qualify, so please do not add activities that do not apply.)

a)

b)

c)

d)

B.) Direct and Substantial Relationship to Surface Transportation System:

In the space provided, check all relationships that apply to the project proposal and briefly describe.

☐ Function

☐ Proximity

☐ Impact

C.) Non-Traditional Transportation Project Proposal:

Briefly explain how the "Enhancement" project proposal is a "Non-Traditional Transportation Project Proposal":

D.) (For Statewide Project Proposals Only) Briefly explain how the project proposal meets statewide criteria:

13. Funding Breakdown for Transportation Enhancement funding:

Work Categories	Breakdown Of Funding			TOTAL for each row across
	Federal Share (80%)	State Share (10%/20%)	Applicant Share (10% min.)	
Programs				
Property Acquisition				
Final Design				
Construction				
Cash				
TOTAL				Total Project Cost:

*Applications submitted by a federal or state agency require a 20% applicant match.

Please indicated the percentage of funding shares, and explain the proposed applicant match, including its source and percentage of overall project costs: (For example, is the applicant match in the form of cash or in-kind services and explain.)

Percentage of Federal Funds requested:
Percentage of State Funds requested:
Percentage of applicant match:

14. Project Proposal Location/Limits: (Please be as specific as possible.)

15. Project Proposal Status: (All applicants must complete the following information.)

A.) Program work category, please answer the following:

Is the Planning Phase complete? ☐ Yes ☐ No

If "yes", by whom?

If "no", please explain why?

B.) Property Acquisition work category, please answer the following: (All applicants must complete the following information.)

1) Is there any property acquisition necessary to complete this project? ☐ Yes ☐ No

If "yes", please explain.

2) Was there any property acquisition already completed for this project? ☐ Yes ☐ No

If "yes", please explain.

3) Has all necessary land acquisition been identified? ☐ Yes ☐ No

If "no", please explain.

4) Does the applicant have permission to all the land? ☐ Yes ☐ No

If "yes", in what way? (answer the following)

Land in Fee: ☐ Yes ☐ No

Permanent Easements: ☐ Yes ☐ No

Temporary Easements: ☐ Yes ☐ No

Eminent Domain: ☐ Yes ☐ No

Please explain.

5) Will this project application impact private property in any way? Ie. Does any part of this project application require construction on or through private property? ☐ Yes ☐ No

If "yes", please explain?

6) Are there any encroachments? ☐ Yes ☐ No

If "yes", please explain.

7) Has there been or will there be any land takings by eminent domain? ☐ Yes ☐ No

If "yes", please explain whether they were or will be of a friendly or hostile nature?

8) Is the land acquisition for: ☐ Preservation or ☐ Construction (Check one).

C.) Final Design and/or Construction Work categories, please answer the following: (All applicants must complete the following information.):

1) Is the Planning/Feasibility Phase complete: ☐ Yes ☐ No

a.) If yes, by whom:

b.) If no, explain:

2) Is the Preliminary Design (25%) Phase complete: ☐ Yes ☐ No

a.) If yes, by whom:
b.) What is the status of the MassHighway review? :

c.) Is the designer a MassHighway-approved consultant?: ☐ Yes ☐ No

3) Is the Final Design (75%) Phase Complete: ☐ Yes ☐ No

a.) If yes, by whom:
b.) What is the status of MassHighway review:

c.) Is the designer a MassHighway-approved consultant? ☐ Yes ☐ No

4) Is the Final Design (100%) Phase Complete: ☐ Yes ☐ No

a.) If yes, by whom:
b.) What is the status of MassHighway review:

c.) Is the designer a MassHighway-approved consultant? ☐ Yes ☐ No

5) If the designer is not a MassHighway-approved consultant, please check one of the following:

☐ local volunteer ☐ city or town engineer

☐ consulting firm ☐ Other

If the designer is not a MassHighway-approved consultant, please explain why this consultant has been selected?

6) If design has begun, but is not complete, please give the design status and estimated completion date:

Design Status:

Estimated completion date:

7) Estimated date to begin construction/implementation:

8) Estimated date to complete construction/implementation:

16. Party Responsible for Future Maintenance & Operation:

Department Name:

Dept. Representative:

Address:

Telephone Number: Fax No.

E-mail address:

17. Americans with Disabilities Act:

A.) Has this project proposal received a waiver under the Americans with Disabilities Act?

No ☐ Yes ☐

If yes, please include a copy of the waiver as an attachment.

B.) Does this project require a waiver under the Americans with Disabilities Act?

No ☐ Yes ☐

If yes, please explain.

C.) Is this project application requesting funding to meet ADA requirements?

No ☐ Yes ☐

If yes, please explain.

18. Public Participation:

A.) Has a public hearing been held on the project proposal? ☐ Yes ☐ No

If "no", please explain why and whether you intend to hold a public hearing.

B.) Does your proposal have an affirmative town meeting vote, city council approval or municipal referendum? ☐ Yes ☐ No

If yes, by whom:

If "no", please explain why.

C.) Is there any known support to the project proposal? ☐ Yes ☐ No

If "yes", please explain who and why.

D.) Is there any known opposition to the project proposal? ☐ Yes ☐ No

If "yes", please explain who and why.

E.) Have you solicited public opinion in any way? ☐ Yes ☐ No

If "yes", please explain how and to whom.

19. Copies of city council, town votes or municipal referendums: To be attached
20. Copies of minutes from public hearings, including any votes: To be attached
21. Any Public Support Documentation: To be attached
22. Any Public Opposition Documentation: To be attached
23. "***Detailed"*** Enhancement Project Proposal Description: To be attached
24. Any site plans and/or locus maps: To be attached
25. Environmental Requirements: To be attached

26. "***Detailed"*** Scope and Budget: To be attached

27. Brief description of Regional Planning Agency Selection Process: To be attached

28. Funding Schedule by TIP year: To be attached

29. Authorizing Signature:

Signature : _____ Date:

Name: Title:

Type Official's Name Type Official's Title

Please note: the individual who is authorized to contract on behalf of the City/Town/Agency must sign Application.

APPENDIX C

COMMONWEALTH OF MASSACHUSETTS
TRANSPORTATION ENHANCEMENT PROGRAM GUIDELINES
EFFECTIVE NOVEMBER 2003

ENVIRONMENTAL QUESTIONNAIRE

Enhancement projects are intended to improve the transportation system through landscaping, scenic protection, historic preservation, bicycling projects, and pedestrian facilities. Although proposed projects are designed to meet the above goals, it cannot be presumed that an enhancement project automatically complies with federal and state regulations for environmental protection and historic preservation.

As federal funds are being provided to implement enhancement projects, MassHighway and the Federal Highway Administration must formally determine that a proposed enhancement project conforms to the requirements of the National Environmental Policy Act, the National Historic Preservation Act, and the Massachusetts Environmental Policy Act as well as other applicable federal and state regulatory provisions.

For many projects, MassHighway and the Federal Highway Administration can document compliance with applicable regulations by using the Categorical Exclusion Determination Checklist. MassHighway is responsible for completing and signing the Categorical Exclusion Determination Checklist but the applicant must supply the relevant information. To complete an Enhancement Application Form, the applicant must answer all of the following questions. This information will provide the basis for MassHighway's completion of the Categorical Exclusion Determination Checklist.

Project name: _____

1. Wetlands

Will bordering vegetated wetlands, saltmarsh or tidelands be dredged, filled, removed or altered by the project?	☐ Yes ☐ No
Will any work take place in a water body (pond, lake, canal, river, or ocean?)	☐ Yes ☐ No
Will any work take place within 100 feet of a wetland or water body, within 200 feet of a river or stream?	☐ Yes ☐ No
Will any work take place within 100 year floodplain?	☐ Yes ☐ No
Will drainage patterns be altered as a result of this project?	☐ Yes ☐ No
Is any portion of the site subject to a Wetlands Restriction Order pursuant to	☐ Yes ☐ No

G.L. c.131, §40A or c. 130, s 105?

Is the project within estimated habitat which is indicated on the most recent Estimated Habitat Map of State-listed Rare Wetlands Wildlife published by the Massachusetts Natural Heritage and Endangered Species Program? ☐ Yes ☐ No

If you have answered yes to any of the above questions, review by the local Conservation Commission is required to complete this application.

Has the local Conservation Commission reviewed this project? ☐ Yes ☐ No

Has the Conservation Commission issued a Determination of Applicability or Order of Conditions for this Project? ***If yes, include a copy with the Application.*** ☐ Yes ☐ No

2. Water Quality

Does the project involve stormwater management? ☐ Yes ☐ No

Will the project change drainage patterns or increase paved or impervious surfaces? ☐ Yes ☐ No

Does the project involve dredging? ☐ Yes ☐ No

3. Historic and Archaeological Resources

Will the project involve work on or near a historic property or archaeological site that is eligible to be listed or listed in the National Register of Historic Places, or listed in the State Register of Historic Places? ☐ Yes ☐ No

Will the project affect a designated Scenic Road or land adjacent to a Scenic Road? ☐ Yes ☐ No

Will the project involve work on or near a historic property or impact any cultural historic or archaeological resource? ☐ Yes ☐ No

4. Scenic Roads

Will the project affect a designated Scenic Road or land adjacent to a Scenic Road? ☐ Yes ☐ No

5. Section 4(f) Lands

Does the project include work within or adjacent to a publicly owned park, Recreation area, or wildlife and waterfowl refuge, or land of a historic site? ☐ Yes ☐ No

Does the project include work within a publicly owned park or recreation area? ☐ Yes ☐ No

6. Hazardous Materials Sites

Has the project site previously been used for use, generation, transportation, storage, release, or disposal of potentially hazardous materials? ☐ Yes ☐ No

Is the project site listed or adjacent to a site listed on the most current List of Confirmed Disposal Sites and Locations to be Investigated? ☐ Yes ☐ No

7. Endangered Species

Does the project occur in an area where there are federally listed endangered or threatened species or critical habitat? ☐ Yes ☐ No

Have the U.S. Fish and Wildlife Service and the Massachusetts Natural Heritage and Endangered Species Program made a determination in this regard? ☐ Yes ☐ No

8. Coastal Zone

Is the project within the Massachusetts Coastal Zone? ☐ Yes ☐ No

If yes, is the project consistent with the Massachusetts Coastal Zone Management Plan (MCZM)? ☐ Yes ☐ No

Has CZM made a determination of concurrence? ☐ Yes ☐ No

9. MEPA Environmental Review

Does the project exceed thresholds for filing under the Massachusetts Environmental Policy Act (MEPA)? ☐ Yes ☐ No

Appendix D

COMMONWEALTH OF MASSACHUSETTS
TRANSPORTATION ENHANCEMENT PROGRAM GUIDELINES
EFFECTIVE NOVEMBER 2003

Resource List

MassHighway District Offices

District 1	(413) 637-1750	Ross Dindio, District Highway Director Richard Masse, Planning Engineer 270 Main Street Lenox, MA 01240
District 2	(413) 584-1611	Albert Stegemann, Acting District Highway Director Meryl Mandell, Planner 811 North King Street Northampton, MA 01060
District 3	(508) 754-7204	Thomas Waruzila, District Highway Director Kate Fox, Planner 403 Belmont Street Worcester, MA 01604
District 4	(781) 641-8300	Stephen O'Donnell, District Highway Director Connie Raphael, Planner 519 Appleton Street Arlington, MA 02476
District 5	(508) 824-6633	Bernard McCourt, District Highway Director Mark Carmichael, District Project Development Engineer 1000 County Street Taunton, MA 02780

MassHighway Bureau of Transportation Planning and Development

Linda Walsh, Transportation Enhancement Program Coordinator	(617) 973-8052

MassHighway Engineering/Consultant Contracts

Guy Rezendes, Transportation Enhancement Program Engineer	(617) 973-7512
MassHighway Consultant Contract Unit	(617) 973-7511
MassHighway Pre-Qualification Consultant List	(617) 973-7525
MassHighway Architect and Engineer Board	(617) 973-7520

MassHighway Right Of Way Bureau

James Mullen, Community Compliance Officer Districts 1, 2 and 5	(617) 973-7951
Daniel Gentile, Community Compliance Officer Districts 3 and 4	(978) 535-8942
MassHighway Real Estate Review Board	(617) 973-7930

MassHighway Cashier's Office

10 Park Plaza
Room 6261
Boston, MA 02116

MassHighway Design Manual (Purchased at the Cashier's Office)	(617) 973-7695

REGIONAL PLANNING AGENCIES

Berkshire Regional Planning Commission
1 Fenn Street, Suite 201
Pittsfield, Massachusetts 01201 - 6229
Nathaniel Karns, Executive Director
Andrew Lenton, Transportation Program Manager
phone: (413) 442 - 1521
fax: (413) 442 - 1523
web site: www.BerkshirePlanning.org
e-mail: alenton@berkshireplanning.org

Cape Cod Commission
PO Box 226
Barnstable, Massachusetts 02630
Margo Fenn, Executive Director
Robert Mumford, Transportation Program Manager
phone: (508) 362 - 3828
fax: (508) 362 - 3136
web site: www.capecodcommission.org
e-mail: pleclerc@capecodcommission.org

Central Massachusetts Regional Planning Commission
35 Harvard Street, 2nd floor
Worcester, Massachusetts 01609-2801
William Newton, Executive Director
Carl Hellstrom, Transportation Program Manager
phone: (508) 756 - 7717
fax: (508) 792 - 6818
web site: www.cmrpc.org
e-mail: chellstrom@cmrpc.org

Franklin Regional Council of Governments Commission
Court House
425 Main Street
Greenfield, Massachusetts 01301
Linda Dunlavy, Executive Director
Maureen Mullaney, Transportation Program Manager
phone: (413) 774 - 3931
fax: (413) 774 - 1195
web site: www.frcog.org
e-mail: transpor@frcog.org

Martha's Vineyard Commission
P.O. Box 1447
Oak Bluffs, Massachusetts 02557
Mark London, Executive Director
David Wessling, Transportation Program Manager
phone: (508) 693 - 3453
fax: (508) 693 - 7984
web site: N/A
e-mail: wessling@mvcommission.org

Merrimack Valley Planning Commission
160 Main Street
Haverhill, Massachusetts 01830
Gaylord Burke, Executive Director
Anthony Komornick, Transportation Program Manager
phone: (978) 374-0519
fax: (978) 372-4890
web site: www.mvpc.org
e-mail: Akomornick@mvpc.org

Metropolitan Area Planning Council
60 Temple Place
Boston, Massachusetts 02111
Marc D. Draisen, Executive Director
Barbara Lucas, Transportation Program Manager
phone: (617) 451-2770
fax: (617) 482-7185
web site: www.mapc.org
e-mail: blucas@mapc.org

Montachusett Regional Planning Commission
R 1427 Water Street
Fitchburg, Massachusetts 01420
Laila Michaud, Executive Director
Brad Harris, Transportation Program Manager
phone: (978) 345-7376
fax: (978) 345-9867
web site: www.mrpc.org
e-mail: bharris@mrpc.org

Nantucket Planning & Economic Development

One East Chestnut Street
Nantucket, Massachusetts 02554
John D. Pagini, Executive Director
Michael Burns, Transportation Program Manager
phone: (508) 228-7237
fax: (508) 228-7236
web site: www.nantucket.net
e-mail: mburns@town.nantucket.net

Northern Middlesex Council of Governments
Gallagher Terminal
Floor 3B, 115 Thorndike Street
Lowell, Massachusetts 01852
Robert W. Flynn, Executive Director
Beverly Woods, Transportation Program Manager
phone: (978) 454-8021
fax: (978) 454-8023
web site: www.nmcog.org
e-mail: bwoods@nmcog.org

Old Colony Planning Council
70 School Street
Brockton, Massachusetts 02401
Pasquale Ciaramella, Executive Director
Charles Kilmer, Transportation Program Manager
phone: (508) 583 - 1833
fax: (508) 559 - 8768
web site: N/A
e-mail: ocpc@ocpcrpa.org

Pioneer Valley Planning Commission
26 Central Street
West Springfield, Massachusetts 01089
Timothy Brennan, Executive Director
Dana Roscoe, Transportation Program Manager
phone: (413) 781 - 6045
fax: (413) 732 - 2593
web site: www.pvpc.org
e-mail: droscoe@pvpc.org

Southeastern Regional Planning & Economic Development District
88 Broadway
Taunton, Massachusetts 02780
Stephen Smith, Executive Director
Roland Hebert, Transportation Program manager
phone (508) 824 - 1367
fax: (508) 823-1803
web site: www.srpedd.org
e-mail: rhebert@srpedd.org

APPENDIX E:

Commonwealth of Massachusetts
Transportation Enhancement Program
Project Implementation Guide

COMMONWEALTH OF MASSACHUSETTS

TRANSPORTATION ENHANCEMENT PROGRAM

PROJECT IMPLEMENTATION GUIDE

Mitt Romney
Governor

Kerry Healey
Lieutenant Governor

Daniel A. Grabauskas
Secretary of Transportation

John Cogliano
Commissioner
Massachusetts Highway Department

Massachusetts Highway Department
10 Park Plaza
Boston, Massachusetts 02116

November 2003

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Transportation Enhancement Program

PROJECT IMPLEMENTATION GUIDE

1.0 Introduction

This guide is intended as a tool to assist applicants for Transportation Enhancement Program funding and Regional Planning Agency personnel in better understanding the MassHighway processes which affect an enhancement project once it has been approved by the Secretary of Transportation. Applicants and others can also use the guide during a project's development stage to assure the project's ability to be readily implemented once it has been approved.

Because of the nature of enhancement projects, some project applicants and proponents may be new to the procedures used by MassHighway to implement projects. This unfamiliarity with highway project implementation can lead to delays or project cost overruns. However, careful project planning and development can avoid these problems.

The implementation process for an enhancement project is similar to that of other federally aided highway projects. This does not mean that every project will follow the same path to implementation; the process will vary depending upon the nature or type of project being implemented. It is important for an applicant to remain actively involved with a project after the Secretary of Transportation has approved the proposal. Approval by the Secretary of Transportation signals the beginning of the implementation process, and the applicant must be prepared to take an active role and work closely with the Regional Planning Agency and MassHighway personnel during this phase to assure successful and timely implementation. It is the responsibility of the applicant to assure that the project is implemented in accordance with MassHighway standards and procedures.

Applicants who are unfamiliar with the process and procedures imposed upon federally aided highway projects should consult with their city or town engineer, highway superintendent, or other local official familiar with the required process and procedures. If a community does not have a municipal engineer or highway superintendent, applicants should contact their MassHighway District Projects Development Engineer or State-Aid Engineer. They are experienced in implementing highway projects, and can provide valuable insight and advice to applicants.

This section briefly describes what an applicant should expect from MassHighway upon approval of a project, and further provides information on federal and state requirements for project implementation.

Once a project has received the approval of the Secretary of Transportation, the applicant will receive a notice from MassHighway listing basic implementation requirements

necessary to begin the process. The notice will also list the name and telephone number of a MassHighway contact person.

2.0 Preparing for Implementation

Regional Planning Agencies and the Enhancement Steering Committee judge proposals, in part, on their readiness for implementation. Therefore, it is essential that applicants remain mindful of implementation requirements during the development stage of their project. Properly preparing a project for implementation begins early in the project planning and project development stages, and assures the Regional Planning Agency and the Enhancement Steering Committee that the project has ample public support, the applicant has made a significant commitment to the project, and the project's design efforts comply with all state and federal requirements.

3.0 The Implementation Process

As stated earlier, depending upon the nature of a project and the level and extent of design completed, different projects may follow different paths to implementation. One of the major factors affecting the implementation process is whether MassHighway elects to advertise the project. The decision is made on a case by case basis, solely at the discretion of MassHighway. This decision is based on a variety of factors, some of which are the size, complexity, and cost of a project.

MassHighway reserves the right to advertise any enhancement project or portion of an enhancement project. As MassHighway does not ordinarily advertise design projects, it is possible and often likely the applicant will advertise the design stage and MassHighway will advertise the construction stage of a project. The following outline addresses the two components: 1) the steps for implementing a project where the applicant is to advertise the project, and 2) the steps to implementing a project in which MassHighway elects to advertise the project. Depending upon the needs of a project, applicants may need to follow both of these procedures, therefore it is important to understand these steps to better prepare a project for implementation.

3.1 Implementation Procedures: Advertisement by Applicant

Step 1. The applicant receives a letter of approval from the Secretary of Transportation.

Step 2. Shortly thereafter, the applicant receives a letter from the Director of the Bureau of Transportation Planning and Development informing the applicant of necessary steps to implement a project. At that point in time, the applicant is instructed to contact the Transportation Enhancement Program Engineer at MassHighway.

Step 3. The Transportation Enhancement Program Engineer will inform the applicant that MassHighway has elected to allow the applicant to advertise the project. The Enhancement Program Engineer will serve as Project Manager and notify the applicant about submission of further information. The nature of this information differs depending upon the work category of the project.

Following are some general examples of the types of information that may be required:

- **Projects Involving Property Acquisition:** The applicant submits information about the property, appraisal(s), etc.

  At this stage, if a project involves the acquisition of property rights, the applicant will be referred to a MassHighway Community Compliance Officer. The Compliance Officer will guide the applicant through MassHighway's Right of Way process. Depending upon the nature of the acquisition, applicants may be required to complete the Right of Way process before proceeding on to the next implementation steps, or the applicant may be allowed to proceed through the Right of Way process concurrently with other implementation steps. For more information on MassHighway's Right of Way process see Section 5.4.4.

- **Projects Involving Design Services:** The applicant submits a detailed project cost estimate, a detailed Scope of Work including a project design budget and schedule, etc.

- **Projects Involving Construction Services:** For a project in which design is complete and it is ready for construction or implementation, the applicant submits, in multiple copies as required by the Project Manager: all plans; construction specifications; a construction budget; an itemized project cost estimate; copies of all environmental permits; a completed Categorical Exclusion (CE) Checklist required to determine the project's compliance with federal environmental laws and regulations; etc. The design stage of a project will be coordinated as described in the *MassHighway Design Manual, 1997 Metric Edition.* Also, see Section 4.1 of this Guide for further discussion of the design process.

Step 4. MassHighway reviews all information submitted to determine compliance with appropriate design standards and compliance with any applicable laws, rules, or regulations. Projects that are found to comply are then submitted to the Federal Highway Administration for funding approval. These submissions occur each quarter of the federal fiscal year (October 1 – September 30).

The Federal Highway Administration may require any of the following documents or verifications depending upon their applicability to the project stage for which funding is sought:

- List of Department of Environmental Protection Hazardous Materials Sites
- Right of Way Certificate
- Certification that there are no substandard features within the project limits

- All required federal, state, and local permits
- Bridge work approval by MassHighway
- A scheduled advertising date
- A completed CE Checklist
- Funding programmed on Transportation Improvement Program (TIP)
- Evidence that a public hearing was held
- A detailed Scope of Work for the project
- A detailed project budget
- An itemized project cost estimate
- Certification that the project is designed in conformance with MassHighway and AASHTO standards.

Step 5. Upon approval by the Federal Highway Administration, federal funds are obligated, and MassHighway drafts an agreement and transmits it to the applicant for signature.

Step 6. When the signed agreement is returned, the agreement is submitted to the MassHighway Board of Commissioners for approval.

Step 7. After the Board of Commissioners approves the agreement, MassHighway issues a Notice To Proceed (NTP). **It is critical that applicants do not begin work prior to receiving the NTP. Any expenses incurred by the applicant prior to receiving an NTP cannot be reimbursed to the applicant.**

Upon issuance of a Notice To Proceed, applicants should be prepared to periodically pay project costs in advance of reimbursement. As a project progresses, the applicant may periodically submit documentation of costs incurred to the District Office for review. Upon approval, MassHighway will reimburse the applicant.

3.2 Implementation Procedure: Advertisement by MassHighway

Step 1. The applicant receives a letter of approval from the Secretary of Transportation.

Step 2. Shortly thereafter, the applicant receives a letter from the Director of the Bureau of Transportation Planning and Development informing the applicant of necessary steps to implement a project. At that point in time, the applicant is instructed to contact the Transportation Enhancement Program Engineer at MassHighway.

Step 3. The Transportation Enhancement Program Engineer will inform the applicant that MassHighway has elected to advertise the project. The Enhancment Program Engineer may notify the applicant to contact the appropriate MassHighway District Office to prepare the project for review by MassHighway's Project Review Committee (PRC).

It is important to keep in contact with the Enhancement Program Engineer during the PRC approval process. Once a Program Manager is assigned, he/she will then become the applicant's main contact throughout the remainder of the process.

Upon satisfactory review by the PRC, MassHighway notifies the applicant that a Project Manager has been assigned to the project. In turn, the Project Manager informs the applicant of the required submission of further information which may include:

- **Projects Involving Property Acquisition:** The applicant submits information about the property, appraisal(s), etc. Also, at this stage the applicant will be referred to a MassHighway Community Compliance Officer. The Compliance Officer will guide the applicant through MassHighway's Right of Way process. Depending upon the nature of the acquisition, applicants may be required to complete the Right of Way process before proceeding on to the next implementation steps, or the applicant may be allowed to proceed through the Right of Way process concurrently with other implementation steps. For more information on MassHighway's Right of Way process see Section 5.4.4.

- **Projects Involving Design Services:** The applicant submits a detailed project cost estimate, a detailed Scope of Work including a project design budget and schedule, etc.

- **Projects Involving Construction Services:** For a project in which design is complete and it is ready for construction or implementation, the applicant submits, in multiple copies as required by the Project Manager: all plans; construction specifications; a construction budget; an itemized project cost estimate; copies of all environmental permits; a completed Categorical Exclusion (CE) Checklist required to determine the project's compliance with federal environmental laws and regulations; etc.

Step 4. MassHighway reviews all information submitted to determine compliance with appropriate design standards and compliance with any applicable laws, rules, or regulations. Projects found to be in compliance are then submitted to the Federal Highway Administration for funding approval. This submission occurs each quarter of the federal fiscal year (October 1 – September 30).

The Federal Highway Administration may require any of the following documents depending upon their applicability to the project stage for which funding is sought.

- List of Department of Environmental Protection Hazardous Materials Sites
- Right of Way Certificate

- Certification that there are no substandard features within the project limits
- All required federal, state, and local permits
- Bridge work approval by MassHighway
- A scheduled advertising date
- A completed CE Checklist
- Funding programmed on TIP
- Evidence that a public hearing was held
- A detailed Scope of Work for the project
- A detailed project budget
- An itemized project cost estimate
- Certification that the project is designed in conformance with MassHighway and AASHTO standards.

Step 5. Upon approval by the Federal Highway Administration, federal funds are obligated, MassHighway advertises the project, and awards a contract.

4.0 Implementation Factors

Many factors must be considered in preparing a project for implementation. This section discusses some of the major factors affecting a project's ability to be readily implemented. Applicants are strongly advised to review these factors during project development to assure the project is ready to proceed to its next phase after approval. Each Regional Planning Agency and the Enhancement Steering Committee member should review these factors when determining whether a project is well prepared for implementation.

Some projects forwarded for implementation may contain components that are inconsistent with the criteria outlined in the program guidelines, or as established by the Federal Highway Administration, the Executive Office of Transportation and Construction, or MassHighway. Where ineligible components are identified, they may be paid for using a separate funding source or eliminated from the project's scope of work.

All enhancement projects must comply with applicable design standards, and all federal, state, and local environmental, historical, and cultural regulations to be eligible to receive federal and state funding.

4.1 The Design Process

Before any project is developed into an enhancement proposal, the applicant should have completed the project-planning stage. The project-planning stage is the first stage in the design process.

Where a project requiring design involves a property purchase or the need to secure a temporary or permanent easement, the applicant should contact a MassHighway Community Compliance Officer. The MassHighway Community Compliance Officer

can advise the applicant on the appropriate actions needed to resolve acquisition issues. The Enhancement Steering Committee will not consider a project ready for design unless evidence is provided that all property acquisition issues, if any, have been or will be resolved in time for construction.

The MassHighway design process is outlined in detail in the *MassHighway Design Manual, 1997 Metric Edition*. The following is a brief outline of the major phases in the design process taken, in part, from the *Design Manual*. Applicants wishing to know more about the design process should consult the *Design Manual*.

There are four major stages in the MassHighway design process: planning; project development and the 25% design stage; the 75% design stage; and the 100% design stage. Each of these steps represents an important milestone in the design process and it is important they be followed in sequence, since each phase builds upon the preceding phase.

Planning: Before a project moves into design, the parameters and feasibility of the project should have been determined, reasonable alternatives to the project should have been considered, and the project to be designed should be the applicant's preferred alternative. Sound planning also involves the provision of meaningful public involvement. Careful project planning helps to avoid unnecessary delays and unforeseen expense during a project's design and construction. All enhancement proposals must have their planning stage complete before an application for enhancement funding is submitted.

Project Development and 25% Design: In this stage, basic design parameters are established, and public concerns and environmental impacts are identified. This may include, but is not limited to: performing geodetic surveying to establish the limits of work; identification and mapping of site features and environmentally sensitive areas; drafting preliminary grading plans; determining applicability of federal, state and local environmental laws and regulations; filing an Environmental Notification Form where applicable; and beginning interagency cooperation, where appropriate.

75% Design: This stage of the design process builds upon the preliminary information provided by the 25% Design stage. More detailed plans and specifications are developed during the 75% design stage. Any permits or clearances required to implement a project are typically initiated during this stage.

100% Design: This is the final stage of the design process in which plans, specifications, cost estimates, utility agreements, traffic management plans, and other design elements are finalized. All environmental and other permits should have been obtained, with plans revised to comply with permit requirements, if necessary.

4.2 Other Design Process Factors

Applicants should be aware of the following factors prior to commencing design.

4.2.1 Eligible Design Costs

Design and engineering costs eligible for reimbursement must be outlined in the contract or agreement, as appropriate, between MassHighway and the project applicant. These costs may include professional services and direct expenses for travel, printing, public hearings/meetings, the consultant's audited overhead rate and a profit margin that is consistent with the practices currently in use by MassHighway's Consultant Contract Unit.

4.2.2 Ineligible Design Costs

Administrative costs incurred by the project applicant are not eligible for reimbursement.

4.2.3 Designer Qualifications

The applicant must select a consultant from MassHighway's pre-qualified consultant list, unless determined otherwise.

MassHighway, through its Architects and Engineers Review Board (A&E Board), maintains an active list of over 300 design consultants that are pre-qualified to do work for MassHighway in approximately 30 different categories of civil engineering, structural engineering, environmental and architectural disciplines. A majority of these firms prepare designs for MassHighway and municipalities on a regular basis. A project applicant who wishes to obtain a pre-qualified consultant list, or discuss the consultant pre-qualification process may contact MassHighway's A&E Board Secretary.

4.2.4 Consultant Selection

A competitive process must be used when selecting a consultant, architect, artist, or any other vendor to perform engineering and design related services. This process can be based on qualifications, price, or combination of the two as determined by the local authority's governing statutes.

When selecting a design consultant, the project applicant should become familiar with the firm's qualifications, experience with federally-aided projects, and performance history. These elements usually have a direct and substantial effect on the timing and efficiency of project implementation and the ability to design the project within budget.

The project applicant should consult with the appropriate legal staff (Town Counsel, Chief Legal Counsel, City Solicitor, etc.) prior to commencing the selection process, to ensure that the proper procedures are followed.

The project applicant may advertise and select a design consultant without MassHighway's consent. However, the applicant must obtain written approval by MassHighway prior to awarding the consultant a contract.

Applicants should keep comprehensive records of the consultant selection process, because MassHighway reserves the right to review all selection process documentation including the consultant's negotiated fee, scope of work, and budget.

Any questions concerning the consultant selection procurement process should contact MassHighway's Contracts and Agreements Manager.

4.3 The Construction Process

In order for any enhancement project to proceed to construction, the project design must be completed through the 100% Design Stage. Regardless of whether MassHighway or the applicant is to advertise a project, all enhancement projects requiring construction must go through the advertising, bid award, and contracting phases of construction.

Construction work includes labor, materials, supervision and traffic police directly related to the construction, rehabilitation, or restoration involved in an enhancement project.

4.3.1 Advertising, Awarding, and Contracting for Construction

In the case where the applicant is to advertise the project, all projects must be publicly bid in accordance with governing statutes, regulations, or guidelines as set forth by the public agency, authority, or commission that is taking responsibility for constructing the project.

An applicant may advertise for a contractor and open bids without the consent of MassHighway. However, an applicant may not award a construction contract without prior written approval by MassHighway.

MassHighway reserves the right to review all documentation relative to the competitive bidding process and the contractor's qualifications.

MassHighway reserves the right, at its sole discretion, to advertise the construction of any project receiving enhancement funding.

4.3.2 Construction Options

There are three ways in which construction may be implemented:

Option 1. Qualified municipal personnel under the supervision of a qualified municipal engineer can perform the work. The contracting mechanism for this option is typically an agreement between the applicant and MassHighway.

Option 2. A qualified contractor who has been competitively selected by the applicant can perform the work. The contracting mechanism for this option is a standard contract between the applicant and MassHighway. The applicant would then contract directly with the contractor.

Option 3. A qualified contractor who has been competitively selected by MassHighway as part of its annual advertising program can perform the work. The contracting mechanism for this option is a standard construction contract between the contractor and MassHighway.

In all cases, qualified personnel at the discretion of MassHighway may perform construction supervision.

4.3.3 Pre-qualification of Contractors Required

For projects whose total construction cost is $50,000 or more, certain classes of work require that the contractor be pre-qualified by MassHighway's Contractor Pre-qualification Committee. Contractors intending to submit a bid on a construction project involving work in these categories must be pre-qualified. Questions concerning pre-qualification for construction contractors or the classes of work covered are directed to MassHighway Construction Contracts and Pre-qualifications Administrator.

4.4 The Right of Way Process

Any enhancement project that seeks enhancement funds to purchase property (acquisition), obtain the temporary right to enter a property to perform work (temporary easement), or to obtain the permanent right to enter and use a property (permanent easement) must follow MassHighway's Right of Way process. Any property purchase or easement acquisition must prove to be an integral part of an enhancement project and be necessary for implementation.

Costs associated with appraisals, county/local registration or filing fees, legal fees, and title examinations are not eligible for reimbursement. However, these costs can be applied to the applicant's local share.

For all property acquired with enhancement funds, the applicant at the time of application must provide suitable verification that the property has been tested for, and does not contain, hazardous materials.

An applicant whose project involves any acquisition of a property right as described above (either temporary or permanent) must begin the Right of Way process by contacting a MassHighway Community Compliance Officer.

4.4.1 Appraisals and Certified Appraisers

MassHighway's Right of Way Bureau has compiled a list of approximately 150 certified appraisers located throughout the Commonwealth. A member on the most current issue of this list must prepare all certified appraisals for enhancement projects. Applicants should be aware that this list is updated periodically.

In all cases, appraisal submissions must comply with MassHighway standards and format for appraisals. Applicants must submit to MassHighway's Right of Way Bureau a minimum of two copies of each appraisal report.

All requests for funds **less than $175,000** requires at least **one** certified appraisal. A Department Community Compliance Officer will be responsible for reviewing the appraisal and approving the maximum amount of reimbursement for the acquisition.

All requests for funds of **$175,000 or more** require at least **two** certified appraisals. A Department Review Appraiser will perform the appraisal review. MassHighway may, at its discretion, forward the appraisals to the MassHighway Real Estate Review Board for approval of the maximum amount of reimbursement for the acquisition.

Applicants should note that appraisal values change over time, therefore the acquisition should be completed within six months of the date of the original appraisal to prevent the need for a new current appraisal.

4.4.2 Conformity with Regulations

Acquisitions must be done in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended (Title 42 U.S.C.). All property management issues are subject to the provisions of 49 CFR Parts 18 & 24, and 23 CFR Part 713.

4.4.3 Public Hearing/Meeting Required

The applicant is responsible for advertising and hosting a public hearing/meeting concerning the acquisition. It is important for the applicant to coordinate this event with a Community Compliance Officer whose attendance is required to represent MassHighway and explain the Right of Way process.

4.4.4 Notice To Proceed Required

No property may be acquired until a contract or agreement, as appropriate, has been executed between MassHighway and the applicant, and MassHighway has issued a Notice to Proceed to the applicant.

4.4.5 Right of Way Certificate

Once the Community Compliance Officer is satisfied that all Right of Way rights have been secured, a Right of Way Certificate will be issued.

4.5 Contact Information

MassHighway Engineering/Consultant Contracts

Guy Rezendes, Transportation Enhancement Program Engineer	(617) 973-7512
Thomas Donnelly, Transportation Enhancement Agreement Administrator	(617) 973-7511
MassHighway Consultant Contract Unit	(617) 973-7511

MassHighway Prequalification Consultant List	(617) 973-7525
MassHighway Architect and Engineer Board	(617) 973-7520

MassHighway Bureau of Transportation Planning and Development

Linda Walsh, Transportation Enhancement Program Coordinator	(617) 973-8052

MassHighway Right Of Way Bureau

Anthony Lumenello, Community Compliance Officer (Districts 1, 2 & 3)	(617) 973-7966
Charles O'Brien, Community Compliance Officer (Districts 4 & 5)	(508) 824-6633

APPENDIX F:

Project Support Letters

The Commonwealth of Massachusetts
Executive Office of Transportation and Construction
Ten Park Plaza, Boston, MA 02116-3969

Mitt Romney
Governor

Kerry Healey
Lieutenant Governor

Daniel A. Grabauskas
Secretary of Transportation

December 23, 2003

Mr. Tom Tidman
Director, Natural Resources
Town of Acton
472 Main Street
Acton, MA 01720

RE: Proposed Bruce Freeman Memorial Bicycle Path
Town of Acton

Dear Mr. Tidman:

I am writing on behalf of the Executive Office of Transportation and Construction to confirm our support for the Town's proposed development of the 4.6 mile segment of the Bruce Freeman Memorial Bicycle Path, an alternative transportation facility, through the Town of Acton.

EOTC has been working cooperatively with the Massachusetts Highway Department, the Department of Conservation and Recreation, municipal governments and funding agencies over the past several years to forward the development of the Bicycle Path through the cities and towns along the 22-mile portion of the Lowell Secondary owned by the Commonwealth / EOTC. We have recently completed our review of the final draft Feasibility Study related to this project, and appreciate the opportunity to review and comment on the study during its development.

EOTC looks forward to working with the Town of Acton, MHD, and various state and federal agencies to develop appropriate documents for the development and operation of the Acton portion of the Bicycle Path and secure funding for its construction. We anticipate the continuation of our cooperative efforts in order to resolve outstanding issues relating to the design and construction of the Bicycle Path in the coming months.

Sincerely,

Maeve Vallely - Bartlett
Manager of Rail

Telephone (617) 973-7000 TDD (617) 973-7306 Telefax (617) 523-6454

Friends of the Bruce Freeman Trail
c/o Tom Michelman
6 Magnolia Drive
Acton, MA 01720
www.BruceFreemanRailTrail.org

May 30, 2003

Mr. Tom Tidman
Natural Resources Director
Acton Town Hall
472 Main Street
Acton, MA 01720

Dear Mr. Tidman:

Congratulations on an outstanding feasibility study for a portion of the Bruce Freeman Rail Trail in Acton. Our group will back you up in getting public support to make the trail a reality.

The Friends of the Bruce Freeman Rail Trail is a citizens action group formed in late 2002 to help make the rail trail concept a reality. There are chapters in each of the towns involved in Phases 2 and 3 of the trail: Acton, Concord, Sudbury, and Framingham. Our primary goals are twofold:

- Help reduce the time needed to convert the right of way to trail. Goals are 5-10 years for Phase 2 (Acton, Concord, and north Sudbury) and 10-15 years for Phase 3 (south Sudbury and north Framingham).
- When the trail is designed and built, make sure it satisfies the desires of residents of the towns that it passes through. There are competing interests that need to be resolved. We are giving special attention to people who live on or near the trail.

Our efforts so far have been concentrated on learning about trail issues and holding discussions with homeowners whose properties abut the railroad right-of-way. Each town's chapter is undertaking these tasks in its own way. For example, Acton is out in front with the comprehensive feasibility study done by Fay, Spofford, and Thorndike (FST), which is an excellent foundation for future efforts. Given this groundwork, we have put our efforts into complementary efforts. Recently as you know, the Acton chapter disseminated information including displaying the feasibility study, and the FST poster used at the February 2003 public meeting on the feasibility study, as well as our pamphlet to build public support at Acton's "Earth Day." We hope we can continue to coordinate future efforts with you and other town staff.

We have great enthusiasm for the rail trail, and look forward to working with the town on the hurdles of rail trail construction. Possibilities include, public education and activities such as group rides or walks on nearby trails, attendance and comment at public meetings and reports, assistance in grant applications, donation of in-kind services (e.g.,

participating in a trail clearing), fund-raising, participating in an appropriate town forum or committee.

In that regard, the model used for the Assabet River Rail Trail (ARRT, Inc.) intrigues us, in which an official multi-town committee works on the negotiations with MassHighway, MAPC, and other state and Federal organizations, while the "friends" group (ARRT, Inc.) mobilizes public support. We believe this may provide a good model for proceeding with the Bruce Freeman Rail Trail, and devoted our May meeting (Tuesday, May 27, 7-9:30 pm at Pedal Power in Acton) to this topic.

Going forward we believe one of the most critical areas for multi-town coordination is the Route 2 crossing. Acton and Concord must work very closely on this, as the crossing is very close to the boundary between the two towns. We worked to make MassHighway and the Route 2 Citizens' Advisory Committee aware of the importance of the trail and having its crossing of Route 2 considered in design of the Route 2 Concord Rotary Replacement Project by writing and speaking with selectman, attending meetings, and submitting comments to MassHighway. Selectmen and town staffs from Acton and Concord will need to make the formal agreements and obtain the funding to get a bridge or tunnel constructed.

Again, I would like to congratulate you, the rest of the Acton Rail Trail Committee, and FST on the excellent feasibility study covering the 2.8 mile mid-section portion of the Bruce Freeman Rail Trail in Action, and on moving ahead with the town-wide feasibility study.

Sincerely,

Friends of the Bruce Freeman Rail Trail - Acton Chapter Steering Committee

Betsy Comstock, 127 Concord Road

Tom Michelman, 6 Magnolia Drive

Susan Mitchell-Hardt, 328 Pope Road

Joyce Reishutz, Pedal Power, 176 Great Road

cc:
Acton Board of Selectman (BOS@town.acton.ma.us)

Acton Stream Teams

6 Magnolia Drive
Acton, MA 01720
June 2, 2003

Mr. Tom Tidman, Director
Natural Resources Department
Town of Acton
472 Main Street
Acton, MA 01720

Dear Mr. Tidman,

As Coordinator of the Acton Stream Teams, I am writing this letter in enthusiastic support of the Rail Trail Project proposed as the Acton portion of the Bruce Freeman Bike Path. As part of this project, appropriate design and construction are needed to provide maximum protection of Nashoba Brook and surrounding resource areas. Given that protection, the proposed trail, which parallels Nashoba Brook, will be compatible with, and may enhance the Acton Stream Teams mission. "Through public education the Acton Stream Teams seek to reduce sources of pollution and excessive nutrients to Acton waterways, and to raise awareness of the wildlife habitat and recreational opportunities provided by Acton's streams."

The Acton Stream Teams have been interested in the conversion of the Acton portion of the rail line to a rail trail since the Stream Teams group first formed in 1998. At that time, over 120 volunteers conducted a visual shoreline survey of approximately 25 miles of streams in Acton. After the survey, the group developed an action plan that included short and long term goals. The development of the rail trail was one of the goals cited.

In anticipation of the rail trail project, a cleanup of abandoned railroad batteries was prompted by the persistence of a member of the Acton Stream Teams. The presence of these batteries, that posed potential environmental, health, and safety hazards, was first noted in the 1998 survey. In 2000, under the guidance of EOTC, Clean Harbors employees removed approximately 22 lead acid and two dozen nickel-cadmium batteries along the rail line.

The proposed rail trail project has the added benefit of helping to link local recreation and resource areas so that they can be reached without the need to use motorized transportation. Pedestrians, cyclists, etc. will be able to travel along the rail trail from Ice House Pond in East Acton to NARA Park in North Acton. The trail in Acton will also be part of a larger regional rail trail. Trails and trail linkages were cited as a priority in the Acton Stream Teams action plan.

The completion of the Feasibility Study is a great first step in a very worthwhile project which will provide a valuable community asset.

Sincerely,

Mary S. Michelman

Mary S. Michelman
Acton Stream Teams Coordinator

cc: Acton Board of Selectmen